DONOR AGREEMENT

Between

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

And

THE MINISTRY OF FOREIGN AFFAIRS AND INTERNATIONAL COOPERATION – DIRECTORATE GENERAL FOR DEVELOPMENT COOPERATION

I. This Agreement relates to a financial contribution to be made by the Ministry of Foreign Affairs and International Cooperation – Directorate General for Development Cooperation (hereinafter referred to as the "Donor") to the Food and Agriculture Organization of the United Nations (hereinafter referred to as "FAO"), hereinafter collectively referred to as the "Parties", towards the implementation of the project entitled Promoting resilience and livelihoods in the Gaza Strip through equitable modernisation of the fisheries and aquaculture value chain", which is outlined in Annex I hereto, and which is hereinafter referred to as the "Project". Annex I is an integral part of this Agreement.

II. The budget for the activities financed by the contribution is set out in Annex I. Prior to effecting changes exceeding 25 percent between categories of expenditure that may be found necessary in the course of implementing the activities, FAO shall consult the Donor.

III. Responsibility

1. FAO shall be responsible for the monitoring and implementation of the Project.

2. The Donor's Implementing Agency, the Italian Agency for Development Cooperation (hereinafter referred to as the "AICS") shall be responsible for the provision of funds to FAO for the Project, in accordance with the terms of this Agreement and its Annex I.

IV. Financial arrangements

1. Schedule of payments

The total amount of the contribution is EURO 2 000 000 (EURO TWO MILLION)

The contribution shall be paid in two instalments as follows:

- First instalment of EURO 1 382 560 (EURO ONE MILLION THREE HUNDRED EIGHTY TWO THOUSAND FIVE HUNDRED SIXTY) upon signature of this Agreement; and
- Second instalment of EURO 617 440 (EURO SIX HUNDRED SEVENTEEN THOUSAND FOUR HUNDRED FOURTY) once 80 percent of the first instalment is spent and committed as evidenced by a certified financial statement.

2. Payment of contribution

The EURO contribution shall be deposited according to the above schedule of payments in the FAO bank account:

Account Name: Food Agr Org – TF EUR
Bank Name: Citibank
33 Canada Square
London, United Kingdom, E14 5LB
Swift/BIC: CITIGB2L
IBAN: GB96CITI18500817853858

and the details of the contribution clearly identified using the reference "GAZA FISHERIES AQUACULTURE".

3. Utilization of funds and accounting

(i) The contribution shall be used for the purposes indicated in Annex I hereto and shall be administered in accordance with the Financial Regulations and Rules, and financial and administrative rules and practices of FAO.

(ii) Under this Agreement, 10 percent of expenditure will be deducted by FAO to cover the indirect costs of administrative support, in accordance with FAO Financial Regulations and Rules.

(iii) Any interest earned on the cash balance of the contribution will be used exclusively for the implementation of the project.

(iv) FAO shall establish a separate Trust Fund account in United States Dollars (USD) showing all the income and expenditures recorded in respect of the contribution Expenditures incurred in a currency other than United States Dollars shall be converted into United States Dollars at the United Nations Operational rate of exchange on the date of the transaction.

(v) Any balance of the contribution that is outstanding at the time of completion of the Project, or of termination of this Agreement, and after all encumbrances (financial liabilities) incurred by FAO prior to completion or termination have been fully liquidated, shall be treated in the following manner:

- If the remaining balance is USD 1 000 or less, FAO shall be entitled to use this balance for similar activities financed by the Special Fund for Emergency and Rehabilitation Activities (SFERA);

- If the remaining balance is more than USD 1 000, this remaining balance shall be repaid to the AICS.

V. Implementation

1. Period of implementation

The start date of the Project shall be 30 days from the receipt of the first instalment by FAO.

The end date of the Project shall be 24 months from the start date of the Project.

FAO shall have no obligation to implement the Project unless all necessary and sufficient funds for the implementation have been received by FAO. If the start date is postponed for that reason, the end date shall be extended accordingly.

The AICS shall allow FAO a period of up to twelve months after completion of the Project, or any termination of this Agreement (close date), to liquidate all encumbrances for activities completed by FAO prior to completion or termination.

VI. Reporting

1. Technical

FAO shall transmit to the AICS semi-annual technical reports and a final technical report on the progress in the activities financed by the contribution. The semi-annual reports will cover periods ending 30 June and 31 December, and are due within 60 days for the period ending 30 June and by March of the following year for the period ending 31 December. The final report is due within 90 days of the end of the project.

2. Financial

(i) Certified financial statements of income and expenditure, prepared in FAO standard format, shall be provided to the AICS on a semi-annual basis (for periods ending 30 June and 31 December), within 60 days for the period ending 30 June and by March of the following year for the period ending 31 December.

(ii) A Final Certified Financial Statement (FCFS) of income and expenditure, prepared in FAO standard format, will be provided by FAO, within 12 months from the end of this Agreement (namely, after settlement of all encumbrances

for activities started by FAO prior to completion or early termination of the Agreement).

VII. Audit

It is understood that all contributions to FAO are subject exclusively to its internal and external auditing procedures. The External Auditors' certification of accounts and audit report will be made available to AICS on an annual basis, within three months from its publication.

VIII. Acknowledgement

FAO will make an appropriate acknowledgement of the contribution in all of its publications emanating from the Project, or in reports that are habitually made available to its Member States. In the absence of the consent of the other party, neither party may otherwise refer to the contribution or to the relationship between the parties in any material of a promotional nature. Of course, donors are always entitled to make reference to their donations in their internal documents and in their annual reports.

IX. Termination

Either party may give the other notice of termination of this Agreement. Such termination shall enter into effect six months after notice has been received, subject to the settlement of any outstanding encumbrances.

X. Notices

Any notices required under this Agreement shall be in writing and shall be delivered personally or sent by registered or certified mail or facsimile to the following addresses:

To FAO:

Daniel Gustafson
Deputy Director-General (Programmes)
and Officer-in-Charge, TC
Viale delle Terme di Caracalla
00153 Rome - Italy
e-mail: TC-ADG@FAO.org

To AICS, the Donor's Implementing Agency:

AICS Rome
Laura Frigenti (Director AICS)
Via Salvatore Contarini, 25
00135 – Rome - Italy
Telephone: +39 06 3691 6253
e-mail: laura.frigenti@esteri.it

or such other addresses as either party shall have notified the other party. Any such communication shall be deemed to have been given or made on the date such letter was hand-delivered, registered or transmitted from the sender's facsimile operator, but any assumption of actual notice shall be subject to rebuttal to show that it has not actually been received.

XI. Amendment of the Agreement

This Agreement may be amended through an exchange of letters between the Directorate General for Development Cooperation of the Italian Ministry of Foreign Affairs and International Cooperation and FAO. The letters exchanged to this effect shall become an integral part of this Agreement.

XII. Settlement of disputes

Any dispute, controversy or claim arising out of this Agreement shall be resolved amicably between the parties.

XIII. Privileges and immunities of FAO

Nothing contained in this Agreement shall be construed as a waiver of any of the privileges and immunities enjoyed by FAO under national and international law, and/or as submitting FAO to any national court jurisdiction.

XIV Prevention of Corruption and Fraud

1. Both the Donor and FAO are firmly committed to preventing and detecting fraudulent and corrupt practices. Consistent with the United Nations Charter, the Standards of Conduct for the International Civil Service, the FAO Staff Rules and Regulations, and FAO Financial Rules and Regulations and Manual Section VI - Procurement, FAO will use reasonable efforts to ensure that the utilization of the contribution conforms to the highest standard of ethical conduct and that every part of the Organization, as well as all individuals acting on behalf of FAO, observe the highest standard of ethics and integrity.

2. In accordance with FAO's regulations, rules and directives, any allegations of fraud and corruption in connection with the implementation of the Project are required to be reported to the Office of the Inspector General (OIG) in a timely manner. Credible allegations will be investigated by OIG in accordance with its regulations, rules, policies and procedures. FAO will, in a timely manner and consistent with its regulations, rules, policies and procedures, provide details to the Donor and AICS of the outcome of substantiated allegations of fraud and corruption, along with details of action taken by FAO.

3. Following the conclusion of any investigation which identifies fraud or corruption involving any activities funded in whole or in part with a contribution made under this Agreement, FAO will:

a. Use reasonable efforts to recover any part of the contribution, which OIG has established as being diverted through fraud or corruption; and
b. As required by the Donor and AICS, and following consultations between the parties, reimburse to AICS any part of the contribution which FAO has recovered further to sub-section (a) above, or credit it to a mutually agreed activity.

4. Any information provided to the Donor and AICS in relation to any matters arising under the Article shall be treated by the Donor and AICS as strictly confidential.

5. Any action further to the above paragraphs shall be consistent with FAO's regulations, rules and directives.

Accepted on behalf of the Donor:

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Fabio Sokolowicz, Consul General,
General Consulate of Italy – Jerusalem

Date: June 20th, 2017

Accepted on behalf of the FAO:

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Ciro Fiorillo, Head of Office/Senior Emergency and Rehabilitation Coordinator, FAO Office inWest Bank and Gaza Strip

Date: June 20th, 2017

Acknowledged by AICS:

.....

Cristina Natoli, Representative,
AICS-Jerusalem Office

Date: June 20th, 2017

Food and Agriculture Organization of the United Nations

Project Document

Strengthening resilience and livelihoods of Gazan fishing communities through promoting the establishment of a marine cage farming social business

FAO West Bank & Gaza Strip

Project Title:	Promoting resilience and livelihoods in The Gaza Strip through equitable modernisation of the fisheries & aquaculture value chain
Project symbol:	Not yet defined
Recipient Country(ies):	West Bank and Gaza Strip
Government(s)/other counterpart(s):	Palestinian Ministry of Agriculture
Expected EOD (Starting Date):	??/??/2017
Expected NTE (End Date):	??/??/2019

Contribution to FAO's Strategic Framework:
(Indicate as appropriate)
	• Strategic Objective/Organizational Outcome: SO5
	• Country Outcome(s): PF Outcome 2
	• Country Programming Framework(s) Output(s): 2.1, 2.2 and 2.3
	• Regional Initiative/Priority Area:
	  • Small Scale Family Farming
	  • Global Blue Growth Initiative

Environmental and Social Risk Classification	low risk ☐ moderate risk ☐ high risk ☐ To be classified by LTO based on Environment and Social Screening entered into FPMIS
Gender Marker[1]	G0 ☐ G1 ☐ G2a ☐ G2b ☐ To be included by Gender Focal Point
Total Budget:	USD 2 102 566

Executive Summary

Fish consumption in the Gaza Strip is very low (3.5kg/person/year) compared with the average consumption of the 5 neighboring countries (Egypt, Israel, Cyprus, Turkey, Lebanon: approx. 15kg/person/year); as is economic access to fish for Gazan households. Both realities are largely due to low catch/production output per year (~2,700 tonnes of fish for 2014); high production costs leading to high prices for fish in local markets and high poverty levels, particularly within Gazan fishing communities. Currently, sea fishing accounts for the majority of domestic fish supply in the coastal territory (95%- sea catch, 5% aquaculture, 2014) yet given the current and fluctuating access restrictions to the sea imposed by Israel, there is a risk that this source of livelihood for around 4000 fishers and their families would become increasingly unreliable and less resilient. Moreover, the fisheries sector is mostly comprised of a poor workforce using traditional, artisanal methods with low labour productivity providing minimal income. Other challenges facing fishermen include: restrictions on essential equipment for restoring/maintaining productive assets and often violent exchanges with Israeli Security Forces off-shore leading to damages and/or confiscation of assets.

[1] See Guidance Note on 'Gender Mainstreaming in project identification and formulation

Given the constraints on fishing and yet the high local demand for fresh fish, Gazan entrepreneurs are now growing marine fish on-land in ponds using brackish water available in the underling aquifer. This method of marine aquaculture is a nascent technology in the Gaza Strip although it's expanding at a high rate. Current production is approximately 340 tonnes of Gilthead Seabream per year (5-10% of local supply, 2014), and with significant expansion planned, end-of-2017 projections stand at 840 tonnes per year. Yet, there are several bottlenecks impeding further development in Gaza including: limited know-how on marine aquaculture management, high production costs; poor access to credit/finance; and lack of necessary public infrastructure.

Taking the aquaculture and fisheries subsector into consideration, this two-year project aims to address the various challenges for fishers and aquaculture producers given the above to strengthen resilience and livelihoods of Gazan fishing communities through promoting the establishment of a marine cage farming social business. A brief summary of the project outputs is as follows:

Output 1: *An off-shore cage culture farm is installed and capacities of the fisheries member institution(s) are developed to manage it as a social business*

Given the favorable growing conditions and high profitability potential, this project will support the establishment of a *fish farming social business* including the provision and installation of an off-shore cage farm in collaboration with the fisheries member institutions (the Fisheries Union and/or Al Twfeek Fisheries Cooperative) and the public sector. Crucial to this new technology integration is ownership of the social business by the member institution(s). The cage farm will in this way have the potential to provide improved incomes, productivity and ensure succession of a sustainable and resilient livelihood to the younger fishing generations. The establishment of *fish farming social business model*, including necessary capacity building efforts, will provide an example to encourage further investment.

Output 2: *Capacities and enabling environment reinforced in support to marine fish farming*

Under this output, the enabling environment will be reinforced to ensure the essential technical and regulatory support for the off-shore cage farm. The project will strengthen capacities in order to improve services of the Ministry of Agriculture and other institutions on technical aspects of marine aquaculture technologies as well as basic health diagnostic services and work to enhance coordination of the fisheries and aquaculture value chain to promote access and linkages to markets.

In order to ensure alignment, ownership and sustainability of results, the Palestinian Authority will be involved throughout the different phases of the project, with the Ministry of Agriculture as the main governmental counterpart. This strong involvement serves to ensure alignment with government strategies, policies and priorities, in addition to ensuring the continuity of supervision and support to the targeted cooperatives and private sector actors in the fisheries and aquaculture value chains beyond the project's implementation period.

According to the principles of FAO's Blue growth initiative, environmental and human well-being will be combined in order to achieve long-term sustainable development for all. As such, the sustainable use and conservation of aquatic renewable resources will be adhered to in an economically, socially and environmentally responsible manner, reconciling the priorities between growth and conservation, and ensuring equitable benefits for Gazan fishing communities.

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Acronyms

AAP	Accountability to Affected Populations
DoF	Directorate of Fisheries
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
HCT	Humanitarian Country Team
ILO	International Labour Organization
JTT	Joint Technical Team
LACS	Local Aid Coordination Secretariat
LTC	Lead Technical Consultant
MoA	Ministry of Agriculture
MoL	Ministry of Labour
MoNE	Ministry of National Economy
NENA	Near East North Africa
NGO	Non-governmental organization
NPC	National Project Coordinator
PA	Palestinian Authority
PCBS	Palestinian Central Bureau for Statistics
PF	Programme Framework
PSI	Palestine Standard Institution
PWA	Palestinian Water Authority
SO	Strategic Objective
UN	United Nations
UNCT	United Nations Country Team
UNDAF	United Nations Development Assistance Framework
WBGS	West Bank and Gaza Strip

Section 1 Relevance

1.1 General context

1.1.1 Rationale

General context in West Bank and Gaza Strip

As reflected by its high unemployment and poverty rates, the impoverishment of broad segments of the population, inadequate investment, and trade deficit, the West Bank and Gaza Strip (WBGS) has been experiencing a relative decline in economic performance. Following two years of double-digit, donor-driven growth, Gross Domestic Product (GDP) growth has significantly declined with the 2013-2014 period registering only 2.3 percent growth and an average unemployment above 20 percent[2]. This decline in economic performance has been a consequence of a number of factors including impediments and restrictions on the movement of people and goods, the expansion of Israeli settlements, control of crossing points and denial of access to and investment in natural resources as well as the on-going blockade on Gaza, in place since 2007-8, which impedes trade between the West Bank and Gaza Strip[3].

Economic growth, livelihoods, food security and access to decent work in the WBGS are strongly associated with agricultural and rural development. The agriculture sector plays a significant role in safeguarding the rights and entitlement of Palestinians to natural resources, valorizing these resources through market relations, and preserving the environment. It remains one of the most resilient and strategic sectors in the Palestinian economy accounting for 3.3 percent of GDP (3 percent in the West Bank and 4.2 percent in the Gaza Strip),[4] around 21 percent of the exports and approximately 8.7 percent of employment (7.8 percent of males 13.1 percent of females)[5]. Israel is the main destination for agricultural exports, accounting for two-thirds of total export value, followed by Arab countries and the European Union.

The Gaza Strip

The Gaza Strip is the small coastal enclave of the Palestinian Territories on the eastern coast of the Mediterranean Sea. It borders with Egypt on the southwest for 11 kilometers and with Israel on the east and north for 51 km. The territory is 41 kilometers long, and from 6 to 12 kilometers wide, with a total area of 365 square kilometers. As of 2014, the population is 1.82 million people with an annual population growth rate of 2.91% (2014 est.), the 13th highest in the world. With its current population, Gaza has a population density of 4 986 people per square kilometer.

Relative to the West Bank, the current socio-economic and political context in Gaza Strip is significantly worse; this is illustrated by the extremely high food insecurity (57%, 2014) and unemployment rates (45%, 2014) recently recorded. Below is a brief timeline detailing the significant political events that currently shape Gaza's socio-political and economic landscape:

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[2] Palestinian Central Bureau of Statistics (PCBS), 2015:

http://www.pcbs.gov.ps/Portals/_Rainbow/Documents/e-GDP-EXPCur2011-2015.htm;
http://www.pcbs.gov.ps/site/lang__en/881/default.aspx#Labour

[3] National Development Plan 2014-2016, State of Palestine

[4] PCBS, 2015: National Accounts Statistics

[5] PCBS, 2015: Labor Force Statistics Annual Report

EN

2005: Israel withdraws from the Gaza Strip under a unilateral disengagement plan. To this day, Israel still maintains direct external control over Gaza's air and maritime space and all land crossings (except the Rafah crossing administered by Egyptian authorities).

2006: Palestinian legislative elections; Hamas wins the elections with 74 of the 132 seats.

2007 (July): Hamas expels the rival party Fatah from Gaza thus breaking the unity government between the West Bank and Gaza Strip, creating two separate governments for the Palestinian Territories.

2008-9: A 3-week violent conflict the Gaza Strip between Hamas and Israeli Security Forces concluding with a ceasefire on 18th January, 2009.

2012: An 8-day violent conflict between Hamas and Israeli Security Forces concluding with a cease fire on 21st November, 2012.

2014: Following reconciliation talks, Hamas and Fatah forms a new unity government.

2014 (July): A 51-day violent conflict between Hamas and Israeli Security Forces resulting in a very high civilian death toll, huge destruction of civilian buildings and infrastructure, and wide scale internal displacement, unprecedented in the Gaza Strip since the initial occupation in 1967.

According to the detailed *Needs Assessment and Recovery Framework for Gaza*[8], damages to the agriculture sector during the latest conflict in 2014 are estimated at USD 500 million, approximately double the total for the 2009 conflict. As given above, this is the third in a series of extremely violent and destructive conflicts spanning over a period of 6 years; the first in 2009, accruing damages and losses to the agriculture sector estimated at US$ 270 million, with the 2012 resulting in US$ 100 million worth of damages. There are up to 24,000 households in Gaza dependent on agricultural livelihoods including farmers, herders and fishers; all livelihood types suffered damage and losses during the conflicts. This included destruction of productive assets such as farmland, greenhouses, wells, herds, animal sheds, boats, fishing gear and food processing plants. These successive shocks are having detrimental immediate and long term impacts on the capacity of food producers to sustain themselves and the local demand for agriculture products.

Finally, the ongoing blockade of Gaza, enforced by Israeli and Egyptian Forces, has resulted in drastic reductions of basic (re)construction materials, certain medical supplies and a variety of agricultural inputs. This has led to stagnancy and low resilience within most agricultural value chains, in particular, the fisheries value chain. Most value chains are now characterized as low in productivity, profitability and investments, given the high risk environment, which ultimately threatens the succession of agricultural livelihoods for future generations.

Challenges to the fisheries and aquaculture sector in the Gaza Strip addressed by the project

While the ongoing blockade and access restrictions are a challenge largely of a political nature and beyond the reach of any single programme, there are challenges that can be addressed within the prevailing context. In particular, the following challenges to be addressed under this project have been identified:

Challenge 1: Unrealized potential of unconventional fish production methods due to several barriers restricting public and private sector stakeholders

Offshore cage farming has expanded rapidly in several Mediterranean countries in close proximity to the Gaza Strip (Turkey, Greece, Cyprus and Italy). This is due to optimal growing conditions for specific fish with high growth rates and high local and international marketability (i.e. Gilthead seabream, seabass). Similar, favourable growing conditions for these species exist in the Gaza Strip although

[8] Detailed Needs Assessment

winter storm events are comparatively more intense along the coastline of Gaza leading to higher risks. Other barriers for private sector stakeholders in Gaza include: (1) zero local knowledge or experience with offshore cage farming, which is a complex production facility demanding highly skilled technicians (2) logistical challenges including movement and material restrictions in and out of Gaza and (3) limited access to the finance or credit required to establish the specific cage farm facility.

Yet, according to feasibility studies conducted and verified by FAO's technical marine aquaculture experts (see Annex 6), the introduction of cage farming in the Gaza Strip can be an entirely profitable and feasible enterprise. This is largely due to the substantial reduction in energy requirements for cage farming in comparison with the current on-land aquaculture production. Given the limited access to grid electricity in Gaza (currently 4-8 hours per day), aquaculture farmers are forced to invest in fossil-fuel generators to ensure 24hr oxygen for fish, which hikes up production costs and prices which in turn limits competitiveness and local access to a highly nutritious protein source. Cage farming uses minimal fossil fuels (transportation via boat to farm site only) as it relies on ocean currents to replenish water and maintain oxygen levels in the cages. As such, cage farming stands to lower the cost of production of land-based approaches in Gaza by 25%.

Challenge 2: Low productivity and profitability fishing sector run by impoverished small scale fishers which restricts sector modernization

As explained in Annex 5, the fisheries sector in the Gaza Strip is mostly comprised of a poor and aging workforce using traditional methods with low labour productivity providing minimal income. Moreover, this sector currently faces extreme challenges such as restrictions on fishing zones, essential equipment for restoring/maintaining productive assets and often violent exchanges with the Israeli Navy off shore. With a decade of the ongoing blockade, this sector has seen sharp declines in output and productivity further impoverishing these households who are now some of the most vulnerable and food insecure in the Gaza Strip. As such, for the vast majority of these households, sector modernization via cage farming is extremely challenging given the level of investment and technical and management competencies required.

Given the potential income via cage farming explained above (and in ANNEX 6), it is vital that through this project Gaza's fishing communities have direct participation and ownership in the proposed cage farming social business. Not only will this boost income, productivity and ensure succession of a sustainable livelihood to the younger fishing generations but it will also enhance social inclusiveness and ownership. Therefore, the project has been carefully designed to ensure ownership by establishing a **social business** within the existing fisheries cooperatives.

Challenge 3: Land-based aquaculture constrained by high costs of production, a lack of technical expertise and access to external markets.

In contrast to the fishing sector, the aquaculture sector is currently operated by a small number competent businessmen using relatively sophisticated materials with good productivity yet constrained by affordable access to key inputs (see annex 5 for further details on Gaza's aquaculture sector). The three main inputs for current land-based fish farming in Gaza are: seed material (fry), feed and electricity. Farmers are currently reliant on neighbouring countries for fish feed and seed material. Due to the tunnel closures to Egypt in 2013, Gaza is now dependent on Israel alone for marine fingerlings, fish feed, equipment and construction materials. These input costs are 20-100% more expensive compared with neighbouring countries due to the extra import duty and transport costs for Gaza which in turn significantly increases production costs.

Apart from the actual input costs, transportation of seed material from Israel is high risk as mortality rates are high due to lengthy delivery procedures. For these reasons, land-based fish farmers are

developing on-site small-scale seabream hatcheries[7]. If successful, these hatcheries can provide quality seed material at a reduced cost, compared with importation prices, to existing land-based farms and to the newly established off-shore cage farm proposed in this project. Given the complex, technical nature of these new enterprises, technical support and guidance is still needed to ensure quality and avoid public health threats. Moreover, access to local and external markets (West Bank, Jordan etc.) is also a challenge for a logistical, political and economic (scale) reasons thus capping the potential of these dynamic sector to local demand only.

Challenge 4: Limited capacity of public sector to facilitate, regulate and advise on new activities within the aquaculture and fisheries value chain.

Given the on-going political crisis in the Gaza Strip, public sector ministries are lacking in financial resources and technical competencies to facilitate, support and strengthen existing or emerging productive sectors of the economy. The related public institutions, namely Ministry of Agriculture (MoA), in particular the Directorate of Fisheries (DoF), and other relevant public stakeholders need to develop their technical and monitoring capacities to effectively support off-shore cage farming. Policy, institutional and monitoring frameworks essential for sustainable off-shore cage farming in Gaza need to be set up.

1.1.2 Alignment and strategic fit

The current project is aligned with FAO's global, regional and national level frameworks and objectives, as well as with the national development strategies defined by the Palestinian Authority (PA) and the United Nations Development Assistance Framework (UNDAF).

At the global level, FAO's Strategic Framework for 2010-2019, which was reviewed in 2013, defines the organization's Vision, Global Goals, Strategic Objectives (SOs), Organizational Outcomes and Outputs. The reviewed Strategic Framework was endorsed by the member nations at the 38th session of the FAO Conference. The current project is in particular aligned with SO 5 to *Increase the resilience of livelihoods to threats and crises*.

This project also aligns with the recently published *2030 UN Sustainable Development Goals*; in particular Goal 2: *End hunger, achieve food security and improved nutrition and promote sustainable agriculture;* Goal 8: *Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all* and Goal 14: *Conserve and sustainably use the oceans, seas and marine resources for sustainable development.*

The delivery mechanisms to implement FAO's Strategic Framework at the regional level are the regional initiatives. For the Near East and North Africa (NENA) region, this project is aligned with the *Small Scale Family Farming* initiative. Furthermore, activities related to improved productivity in tandem with conservation and sustainable management of ocean ecosystems will be delivered using guidance according to FAO's global Blue Growth Initiative[8], which is applied in the NENA region in full complementarity and integration into its regional initiatives.

At the national level, the current project is directly addressing the FAO's Programme Framework (PF) for the WBGS (2014-2017). More specifically, it addresses the PF Outcome 2, which intends to *develop the capacity and enable the environment of the agriculture sector for increased productivity,*

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[7] As of Dec. 2016, the pilot hatchery is operational and producing the first batch of fingerlings currently at 150 grams. This initiative was supported by USAID. Once fully operational, and assuming no major issues with fish diseases, in 2-3 years this hatchery could provide up to 50% of current fry demand which approx., 1 million fry (as of Sept. 2016, total demand is approx. 1.8-2 million fry).

[8] The *Blue growth* initiative aims at conservation and sustainable management of fishing based on the premise that healthy ocean ecosystems are more productive and a must for sustainable ocean-based economies.

competitiveness and employment. The project is also fully aligned with the *National Agriculture Sector Strategy "Resilience and Sustainable Development"* 2017-2022, developed by the MoA -with technical support from FAO, where supporting economic growth, food security and private sector resilience through optimized agricultural value chains remained a top priority as clearly expressed in the SOs 1, 3 4 and 5 of the strategy.

To ensure coordination of United Nation (UN) initiatives in alignment with the Palestinian National Development Plan 2014-2016, the current project is also aligned with UNDAF 2014–2017, particularly outcome 1 (for which FAO is a lead agency).

1.1.3 FAO's comparative advantage

As a specialized agency of the UN, FAO has a comprehensive mandate from its member countries to work on all aspects of food and agriculture (including fisheries, forestry and natural resources' management), food security and nutrition across the humanitarian-development continuum. Its intergovernmental status, neutrality and authority allows it to provide a platform for multi-stakeholder dialogue and knowledge exchange and collaboration.

FAO has globally shown strong experience in delivery of capacities and development within the agriculture and fisheries sectors. FAO has the ability to deliver best technical solutions and to pilot new approaches. FAO is also a "Centre of Excellence" in the fisheries sector through the Fisheries and Aquaculture Division and has in-depth experience in aquaculture development, extension services in the field and long-standing experience in the planning, implementation, monitoring and evaluation of fisheries and aquaculture projects and programmes worldwide. Moreover, FAO has an elaborate roster of expertise worldwide in all subjects of relevance for fisheries and aquaculture. Drawing from across all areas of the Organization's operations, FAO's regional and global teams of professional and multidisciplinary staff experts support its country-level operations. FAO has demonstrated responsible financial and administrative management in line with the highest international standards.

Such diverse technical and operational expertise have allowed FAO to build a strong reputation for achievement and a robust foundation of lessons learned in designing and implementing agricultural development, resilience and emergency projects as well as a specific capacity to operate within the complex political and socio-economic context of the WBGS.

1.1.4 Stakeholder consultation and engagement

Stakeholders

"Stakeholder" refers to project affected communities and national and local authorities, and where appropriate, other stakeholders[9]. The direct beneficiaries of this project are Gaza's fishing communities represented by the fisheries member institutions, as well as the PA more specifically the DoF of the MoA. Ultimately, indirect beneficiaries that will benefit from the project are fishermen, consumers, food and agriculture sector workers, non-governmental organizations (NGOs), private sector stakeholders and service providers. A profile of the main stakeholders in this project follows below; the main stakeholders and beneficiaries were identified during consultation meetings organized by FAO's marine aquaculture experts during their feasibility assessment mission to Gaza in October, 2015.

[9] Those not affected by the project but have an interest. These could include civil societies, NGOs, sectors other than the agricultural sector etc.

Fisheries member institutions

a) Fishermen's Union

The Fishermen's Union was established in 1996 in cooperation with the Public Union of Workers that embraces all work unions in the various fields (Law N. 331 of 1954/ Union's Law). The Public Union of Fishermen in the Gaza Strip is the representative body for fishermen and it has executive branches in all governorates: Fishermen's Union in Gaza (9 members), Fishermen's Union in Deir al Balah (5 members), Fishermen's Union in Khan Yunis (7 members) and Fishermen's Union in Rafah (5 members). The members of the executive branches are elected directly in each governorate by official members holding a valid membership cards. The members of the Public Union at central level are 11 distributed in the different governorates: four members from Gaza, two members from Deir al Balah, and three members from Khan Yunis and two from Rafah. The Union has the license number 2/2002 and is registered in the Ministry of Labour (MoL).

The main activities of the union are as follows:

- Represent fishermen before governmental and nongovernmental departments.
- Defending the rights of fishermen before official parties and enforcing legitimate claims of the fishermen.
- Providing fishermen with health insurance.
- Resolving disputes that may arise between fishermen.
- Issuing local laws that may enhance the performance of the union in a way that does not contradict public laws and regulations.
- Provide support and assistance to fishermen.

During discussions with FAO's marine aquaculture consultants, governing members stressed their willingness to participate in this proposed project according to the strategy outlined in *section 2.2.2.*

b) Al Twfeek Cooperative Society for Fishermen

The Al Twfeek Society for fishermen is a cooperative institution established in 1973 via an initiative from 32 fishermen. Currently, the number of participating members in the society is approximately 400. The society is administered by an elected board that governs for two-year terms. Its main branch is permanently located in Gaza city. This branch includes a number of facilities such as an ice factory, cold stores for keeping fresh fish and a fuel station to provide fishermen with fuel. The society is subject to the Cooperation Act No.50/1933, Cooperative Societies Regulation 1934 and the Amended Legislations. The society also provides different services to its members with regards to marketing and advice on technical equipment and materials for fishermen such as fishing nets tools and spare parts. In addition, and in cooperation with other institutions and local and international Banks, the cooperative has been able to offer small loans to their members.

Al Twfeek Society has benefited from several emergency interventions funded and implemented by the international donor/NGO community which included the provision of fishing supplies and requirements, job creation opportunities and loans for the fishermen directly after periods of conflict. The cooperative is also continually searching for innovative and modern approaches to fish catch and farming to boost resiliency, profitability and productivity and to ensure succession of fishing livelihoods for future generations. They have identified off-shore cage farming as an activity with very high potential given the favorable ocean temperatures for marine aquaculture along the Gazan shoreline and the current access restrictions on Gaza's fishing zone. The lack of access to finance and local technical experience are the major barriers for members of the cooperatives to pilot this approach.

PA institutions

The project will also be targeting the relevant PA institutions to strengthen their capacity to enable fisheries and aquaculture sector development. The PA is directly targeted mainly under Output 2, activity 2.1 & 2.2, while the relevant public institutions and in particular the DoF of the MoA will be

involved in the implementation of the interventions under activity 1.1-1.4. The ministries and public institutions involved are the MoA, Palestinian Water Authority (PWA), Ministry of National Economy (MoNE), MoL, and the Palestine Standards Institution (PSI). The role of each of these institutions and their involvement in the project is further outlined under Section 2.2.1 *Institutional Framework and Coordination.*

Current (and future) Marine Aquaculture farmers

As previously stated, there are three intensive fish farms producing sea bream established along the shoreline of Gaza, two close to Gaza City and the third based in Khan Yunis. Key production inputs such as fish feed and seed material (fry) are currently being imported from Israel. Current demand for fry is approx. 1.8-2 million per year. Due to the tunnel closures to Egypt in 2013, Gaza is now dependent on Israel for marine fingerlings, fish feed, equipment and construction materials at comparatively high costs. Transportation of seed material from Israel is also high risk as mortality rates are high due to lengthy delivery procedures.

All production facilities currently produce gilthead seabream with a total production quantity of approximately 340 tonnes per year (2016). Each farm has vertically integrated their enterprises by establishing on-farm restaurants allowing them to increase their margin on fish sold in the restaurants. The two major producers (located in Khan Yunis and South Gaza City) are currently in the process of large-scale expansion, more than double their current capacities. If projections are met, by the end of 2017 the Khan Yunis farm will have increased from 200 to 500 tonnes/yr. while the South Gaza City farm will expand from 120 to 320 tonnes/yr. The total increase by the end of 2017 will be 500 tonnes/yr. thus increasing total production capacity to 840 tonnes. According to both business owners, this increased capacity will be close to total local demand at their current cost and sale prices.

The third producer is much smaller in terms of production capacity (20 tonnes per year) but he is focusing on producing seed material (fry) for the local supply chain. With financial support from USAID, he has recently established the first gilthead seabream hatchery in the Gaza Strip with a current production capacity of up to 1 million fry. Still in the developmental phase, he has successfully produced his first batch of fingerlings with industry average mortality rates. Finally, a fourth entrepreneur based in Khan Yunis is exploring the possibility of cage farming in the south seas of the Gaza Strip. Supported by USAID, they have produced a technical plan for a 400 tonne cage farm and are now in the process of gaining access to technical training outside of the Gaza Strip for this venture.

Extensive discussions with each entrepreneur, ascertaining the underlying bottlenecks that limit new and existing aquaculture investments, has led to the formulation of specific outputs and activities presented in this document. They all: 1) stressed the importance of supporting existing marine hatcheries in Gaza, 2) indicated interest in future in cage farming activities once proven possible (either independently or investing as a partner of the newly formed social business) and 3) raised concerns regarding the entry of another business (the cage farm social business) producing seabream for the local markets. They are willing to participate in the activities under output 2 of this project. Moreover FAO will look to create synergies with all existing actors in the aquaculture value chain to ensure both project outputs. One potential strategy to investigate is the purchasing of fingerings for the cage farm from existing local hatcheries to encourage sustainable capacity upgrade of the hatcheries as they build their enterprises.

Local community based/non-governmental organizations

The project will collaborate with local community based organizations and NGOs, in order to: (i) increase responding possibilities to local needs and therefore enable the development of integrated interventions; (ii) ensure transparency and accountability throughout targeting and operation functions; (iii) assure information exchange and reinforce the capacity development of beneficiaries; (iv) avoid duplication or overlap of interventions; and (v) capitalize on abilities to communicate at various levels.

Stakeholder engagement

Stakeholder engagement is an on-going process that involves in varying degrees identification of stakeholders, disclosure and establishment of a mechanism by which people can make comments on project proposals and performance, or raise grievances.

FAO is committed to ensuring meaningful, effective and informed participation of stakeholders including the donor, government authorities, other NGOs and communities in the formulation and implementation of FAO projects. As such, FAO follows a consultative process of engaging stakeholders at all stages of the project. The project aligns and addresses the needs and priorities of the country's national strategies towards the agriculture and water sectors (See section 1.1.2 *Alignment and Strategic fix)*. Regular consultation and coordination between FAO, the stakeholders and the MoA takes place during the formulation of the project and will continue during implementation.

FAO works to enable affected populations to play an active role in processes that affect them through the establishment of meaningful and representative participatory processes. Representatives of the targeted cooperatives and communities as well as the related government authorities and municipalities, are given an opportunity to influence initial assessment, project design, criteria for targeting and selection, project implementation, monitoring and evaluation.

At the initial assessment and project design stages so far, the capacities, gaps, challenges and needs of the fisheries and aquaculture value chain in the Gaza Strip have been comprehensively assessed and identified through FAO's accumulated experience from previous and ongoing projects working in direct consultation with related stakeholders. In addition, through a participatory process involving FAO technical consultants and local staff with the targeted communities, several potential risks were identified and a risk management strategy was developed to identify tailored mitigation measures (See section 02.1 *Risk Management*).

Project planning, development and implementation will be done in a participatory manner with the stakeholders and target beneficiaries, including, representatives of the Donors.

Grievance mechanism

Should beneficiaries or stakeholders have concerns regarding the project interventions and in particular violations of FAO's social and environmental commitments[10], action will be taken to facilitate the resolution thereof. Concerns will be addressed in accordance with the Guidelines for *Compliance Reviews Following Complaints Related to the Organization's Environmental and Social Standards*[11], which applies to all FAO programmes and projects.

At the local level, FAO WBGS' office has the responsibility to address concerns brought to its attention. FAO provides access to a grievance mechanism throughout the project's life cycle (fax/email details for comments and complaints included in application form, regular field visits by FAO technical staff, post-distribution monitoring, and mid-term review and final evaluation of the PF).

Grievances are addressed individually by staff not directly involved in the implementation of the same actions (with the monitoring officers acting as a point of entry) and may require engaging with implementers, the local community and authorities and other stakeholders. In all cases, the complaints are entered into a central database for tracking, follow up and analysis.

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10 FAO 2015. "Environmental and Social Management - Guidelines"

11 FAO 2015. "Compliance Reviews Following Complaints Related to the Organization's Environmental and Social Standards" http://www.fao.org/aud/42564-03173af392b352dc16b6cec72fa7ab27f.pdf

Disclosure

FAO will disclose information in a timely manner that is accessible and culturally appropriate, giving due attention to the specific needs of groups which may be affected by project implementation (such as literacy, gender, differences in language or accessibility of technical information or connectivity)[12]. FAO will announce the project to all potential beneficiaries in Arabic, including all relevant information regarding project activities, timeline, location and application process. During the implementation of activities, the FAO project team and the IPs will ensure effective dissemination of information to the beneficiaries regarding delivery of goods and services.

1.1.5 Knowledge sharing and lessons learned

Since 2008, FAO has implemented a number of projects to support communities working within the fisheries and aquaculture value chain in Gaza. These projects improved household-level food production, higher domestic food quality and nutrition, and provided operational coordination and evidence-based, food security-related information management. In addition, FAO is executing a five-year scientific regional project (commenced in 2009) which will inform the sustainable management of marine fisheries in the Eastern Mediterranean region, and will consequently support national economies and protect the livelihoods of those involved in the fisheries sector.

Under the guide of its Programme Framework 2014-2017, FAO has directly assisted more than 140 000 Palestinian people (i.e. 28 500 poor households) through several projects programs in the WBGS focusing on improved market-oriented food production; strengthening income and purchasing power; higher levels of domestic food quality and nutrition and more adequate food safety.

Furthermore, FAO is currently implementing a holistic program for High Value Crops sector development, particularly in the Gaza Strip, funded by the Netherlands. This program will enable 1 600 female and male farmers organized within 27 associations in the West Bank and Gaza Strip to improve the competitiveness of their horticultural products at local and international markets, on the basis of an improved value chain and enhanced stakeholder capacity/involvement. Key lessons will be drawn from this experience and reapplied if and when applicable for the development of the fisheries and aquaculture value chain as designed in this project.

Building on more than ten years of experience in the context of efficiency of natural resource use and value chain development in the WBGS, FAO has drawn lessons learned from a number of previous projects and interventions for the formulation of this project. Project progress reports, mid-term reviews and evaluations provide valuable sources for this information. Knowledge sharing is an important component of the project in that lessons learned from each project will be shared not only at country level, but also at a higher level through exchange of lessons learned and experiences between projects in different countries. The sharing of lessons learned is one of the core functions of the Joint Technical Team (JTT) (See Section 2.2.6 on Project Management), where a continuous information flow to the related stakeholders outside of JTT will be ensured through facilitation of workshops, coordinated advocacy and participation in existing coordination fora. Lessons learned will also be shared through communication activities outlined in Section 02.4 *Communication*.

[12] FAO 2015. "Environmental and Social Management - Guidelines"

1.2 Expected results

1.2.1 Impact

The impact (development goal) the project is intended to contribute to is:

Income sources for Gazan fishing communities' are sustainably diversified and local availability of quality fish for consumption is improved.

1.2.2 Outcome

Through this project, FAO ultimately expects to contribute to the following outcome:

Gazan fishers are enabled to use a new approach in high value fish production through off-shore cage culture social business

The outcome will be achieved through outputs 1 and 2.

Output 1: *An off-shore cage culture farm is installed and capacities of the fisheries member institution(s) are developed to manage it as a social business*

Summary of activities under Output 1 (for further details see Annex 1: Logical framework and Annex 2: Workplan):

FAO will oversee the creation of an autonomous social business within the fisheries member institutions (**Activity 1.1**) to fully manage the new farm once installed. In parallel, FAO will provide and install an off-shore cage culture farm along the Gazan shoreline in close proximity to the Gaza Port (**Activity 1.2**). The 'turn-key' design, installation and management support will be implemented by an international company chosen via an international competitive tender with FAO's oversight and supervision. In parallel with these activities, FAO will manage a series of necessary technical training and capacity building activities (local and abroad) required to bring the new farm technicians and managers up to the skill level required for successful farm business management (**Activity 1.3**).

More specifically, Output 1 aims to achieve:

- The provision and installation of a highly productive marine aquaculture farm offering new opportunities for fishermen. This will serve as a demonstration farm which will (a) encourage new investors into the sector creating further economic opportunities and (b) provide a platform for further training and technical knowledge sharing to other private sector stakeholders
- Creation of a complementary fishing activity, as opposed to one competing with traditional fishing approaches, thus mitigating social risks and ensuring community-wide ownership

Output 2: *Capacities and enabling environment reinforced in support to marine fish farming*

In order to valorize the social business investment, FAO will support the indispensable public sector capacity building to strengthen their regulatory, licensing and monitoring functions required for off-shore cage farm development. The specific activities include (for further details see Annex 1: Logical framework and Annex 2: Workplan):

Technical support to the MoA and other ministries for necessary policy formulation and decision-making for managing new off-shore cage farming (**Activity 2.1**). Capacity development of MoA and other institutions to provide essential regulatory services such as a functioning fish disease control and licenses and zoning for off-shore farming etc. (**Activity 2.3**). FAO will also facilitate focused dialogue

between stakeholders to enhance coordination of key actors in the fisheries and aquaculture value chain towards better access to local and external markets **(Activity 2.3)**.

More specifically, Output 2 aims to:

- Provide essential support to public sector monitoring and regulatory services prompting sustainable development of marine aquaculture in Gaza Strip.
- Enhance local public sector expertise in marine aquaculture management including: environmental monitoring, disease monitoring etc.
- Enhance coordination between producers and public sector stakeholders within the value chain leading to stable supply, prices and market systems while protecting Gaza's marine eco-system as guided by FAO's "Blue Growth" initiative.

1.2.3 Assumptions

The project was largely developed on the assumption of continued occupation and conflict; however it is assumed that the political, security and access situation does not further deteriorate to a level that would hamper the project implementation. High-level political negotiations and the international 'profile' of the WBGS reduce the likelihood of considerable deterioration of the security situation in the WBGZ. However, risks will be carefully and continuously monitored with the help of the Risk log (See ANNEX 4). See section 2.1 *Risk Management*, for further details regarding risks facing the project and the risk management strategy.

The commitment from involved cooperatives and associations, the private actors as well as from the PA with regard to providing necessary services is assumed to be continued throughout project implementation. By engaging stakeholders in all stages of the project -from formulation and design through implementation to monitoring and evaluation- continued commitment is assumed to be ensured. However, the effect of external factors such as significant changes in political and access context or in social perceptions cannot be disregarded.

The project is developed within a flexible framework to enable accommodation of changes in the programming context. The relevance of assumptions will continuously be revisited with the use of the main tools, namely the Logical framework (ANNEX 1) and the Risk log (ANNEX 4). This will inform programming and action will be taken to adapt implementation if necessary. The assumptions defined in the Logical framework, will be revisited regularly, in particular during the mid-term review and if needed in conjunction with periods of project reporting.

Section 2 Feasibility

2.1 Risk Management

Risk is defined as the effect of uncertainty on objectives; where the effect is a deviation from the expected – positive and/or negative. Risk management can be considered a coordinated set of activities to direct and control an organization with regard to risk. It comprises a structured, methodical approach to identifying, scoring and reducing exposure to risks for the achievement of objectives.

2.1.1 Significant risks facing the project

The unpredictable situation in the region does present risks in terms of project implementation. However, FAO has many years of experience working in the area and has responded in an adequate manner to situations that have arisen in the past. In the Gaza Strip, project risk assessment is crucial for a successful planning and implementation. Despite the 2005 disengagement from Gaza, Israel maintains direct external control over the territory (Gaza's air and maritime space, and lands crossings). Israel Security Forces frequently enter Gaza for short clearing/leveling operations and maintain a no-go buffer zone within the territory. Moreover, Gaza is partially dependent on Israel for its water, electricity, telecommunications, and other utilities.

In terms of implementation, a key risk is damage to project assets due to another large scale escalation of hostilities between Israeli Authorities and the De Facto Authorities in Gaza. During the past 8 years (2009-2016), 3 major conflict events have taken place causing wide scale destruction of productive assets in Gaza worth hundreds of millions of US dollars (see section 1.1.1 for further details). Within this context, risks cannot be avoided but mitigation measures can be taken to minimize the impact on the project. As such, the project has been carefully designed to avoid/mitigate significant risks such as these, for example by ensuring project construction sites are fully coordinated with all relevant authorities to reduce the likelihood of damages.

Other similar risks include changes in either policy or initial agreements by the relevant authorities regarding establishment and/or continual access to the off-shore cage farm or more restrictions on the importation of cage farm construction materials into the Gaza Strip. To mitigate such risks, FAO will ensure continuous communication and coordination with local authorities throughout the project timeline and advocate with keys actors from Humanitarian Country Team to prevent such scenario. Moreover, worth noting is the recent letter written to FAO's Head of Office, Jerusalem, signed by Major Amati Cohen, Head of International Organization and the Gaza Reconstruction Mechanism (GRM), Israel CLA, agreeing in principle to the establishment of off-shore farming in the Gaza Strip under the supervision of FAO (November, 2016).

The unstable political situation may also impact the movement of goods into the Gaza Strip. However, as a UN agency, FAO has the possibility to arrange facilitations with the Israeli authorities on the movement of goods. As such, full coordination on the materials required for the cage farm will take place with the Israeli authorities to ensure vital materials will enter into Gaza. Precedent of coordination with Israeli Authorities and UN agencies for the successful movement of goods to establish sophisticated, high-tech facilities exist; most notable is the newly installed Water Desalination Treatment Plant in Khan Yunis managed by UNICEF and the newly established Waste Water Treatment Plant in North Gaza instigated by UNDP, World Bank and PWA.

If all risk mitigation strategies mentioned above (and detailed in ANNEX 4) fail, meaning that at a determined point during implementation it is decided that the likelihood of failing to establish the cage farm within the project timeline is very high, then an alternative land-based fish farm or related business will be established instead. The exact same intervention strategy/methodology (as given in

section 2.2.2) will be applied including the establishment of the social business within the fisheries member institutions, ensuring ownership by the Gazan fishing communities.

Once the cage farm is established, another risk is that the social business is unable to secure sufficient finance or access to credit for the fish farm production costs before it starts generating net revenues. In that case, the social business would not be able to achieve the full productive potential of the off-shore cage farm. To this end, FAO will support the fisheries membership institutions throughout the duration of the project, to enable the social business to access credit, or to gain additional financial support from donors to support the first production cycles.

Further, to avoid market failures via over supply of gilthead seabream in local markets by further on-shore fish farm expansion, FAO will promote access to West Bank and external markets as defined in Output 2 of the project. These measures will build market resilience and stability leading to stable supply and prices as the sector grows.

Other risks include restricted movement of project staff between Gaza and Jerusalem and vice versa. This is considered a low risk and the national project team is expected to be able to access project locations and sites with relevant permits and UN vehicles. However, the movement of beneficiaries from Gaza to international training locations in the Mediterranean region will require more time and coordination efforts with relevant Israeli Authorities.

Most of the cage farm materials will be located 2-3 nautical miles off the Gazan coastline fully exposed to the physical elements and other fishermen. It won't be technically or economically feasible to try and provide continual security at the farm site thus risks exist such as theft or destruction of assets by other fishermen. The likelihood of these risks having an impact on the project is relatively low given that the wider fishing community in Gaza will have ownership of the cage farming social business. To prevent the involuntary destruction of the cage installation by other commercial vessels operating in the same densely populated fishing zone, the farm will be well marked with light signals, etc. to avoid any accidental damages. The farm location will also be identified in coordination with the Gaza Port Authority and MoA and will be shared with other fishermen to mitigate this threat.

Over the past 5 years, there have been a small number of winter storms that have created currents of up to 2 knots and extreme waves of approximately 10 meters in height, relatively close to the shoreline, which pose significant threats to fish in cages. In this regard, FAO will ensure that all technical designs for production facilities take extreme climate events into consideration. Regarding the cage farm, fish grow-out cycles will avoid the periods during the year in which storms are frequent to lower the threat of fish loss (January – February)

A detailed analysis of risk factors including political/security, financial/economic and environmental aspects along with their respective estimated scores for impact and likelihood and defined mitigation measures is outlined in the Risk log (See Annex 4).

2.1.2 Environmental and social risks

FAO's *Environmental and Social Management Guidelines*[13] include nine Environmental and Social Standards (ESS) setting out specific requirements relating to different social and environmental issues[14] that all FAO projects must meet. In order to monitor environmental and social risk, all FAO projects undergo an *Environment and Social Screening* in order to identify and classify any such risks associated

[13] http://www.fao.org/3/a-i4413e.pdf

[14] These include: (ESS 1) Natural Resource Management; (ESS 2) Biodiversity, Ecosystems and Natural Habitats; (ESS 3) Plant Genetic Resources for Food and Agriculture; (ESS 4) Animal - Livestock and Aquatic - Genetic Resources for Food and Agriculture; (ESS 5) Pest and Pesticide Management; (ESS 6) Involuntary Resettlement and Displacement; (ESS 7) Decent Work; (ESS 8) Gender Equality; and (ESS 9) Indigenous Peoples and Cultural Heritage.

with individual projects. Each project will be classified as low, medium or high risk by the LTO. If the project is classified as low risk, it has no or minimal potential negative environmental and/or social impacts, either upstream or downstream. The project will not be controversial in terms of the interests of key stakeholders. In case there are minimal impacts, the risk may remain low if it is widely known and there are good practices to mitigate the impact of such risks.

As this project focuses on the development of modern marine aquaculture technologies (cage farming) it adhered to the ESS 4 *Animal – Livestock and Aquatic – Genetic Resources for Food and Agriculture*. In accordance with the standard, the project's objective is to promote sustainable management of aquatic genetic resources, to prevent loss of valuable genetic diversity and to safeguard against actions resulting in unintended environmental and social consequences. These concepts are enshrined in the *FAO Code of Conduct for Responsible Fisheries (CCRF)*[15] to which the project will adhere. The project is furthermore aligned with FAO's strategic policies established in the FAO Technical Guidelines for Responsible fisheries, in particular no. 5, *Aquaculture Development*[16].

The main environmental challenges regarding the production technique proposed in this project are: (1) ensuring minimal pollution or negative marine eco-system effects of off-shore cage farming and (2) ensuring minimal pollution, the recycling of waste and efficient use of water resources from the pre-fatting facility and existing on-shore fish farms. To safeguard against environmental risks involved in the use of cage farming technology, FAO will provide technical and in-kind support to the DoF of the MoA to ensure they have the capacity to facilitate the responsible marine aquaculture development in Gaza Strip in terms of planning, environmental conservation and monitoring and regulation. Moreover, the project will make sure that the fisheries cooperatives and public institutions have adequate administrative, financial and technical capacities to responsibly manage aquaculture systems. More specifically, these capacity enhancement activities will include strategies to ensure that wild populations and their genetic diversity are maintained; sustainably manage water resources; apply Good Hygiene Practices (GHP) for cage farming and marine hatchery production; minimize pollution and the use of polluting inputs during production; avoid distortion of Gazan's marine eco-system due to over-stocking and feeding of the farm cages; reuse waste; and integrate of environmental conservation measurements within the production chain. The species to be used in the cage farm (Mediterranean seabream and seabass) are existing in the area and caught along the Gazan coast, hence the project does not introduce new species which can adversely impact aquatic biodiversity.

The project will also specifically address the four pillars of decent work as outlined in section 3.4 *Decent Work*.

2.1.3 Risk management strategy

The assessment and analysis of risks will be followed by a coordinated application of resources to monitor, minimize and control the probability and/or impact of risks. External risk factors will continuously be considered in order to ensure an adequate understanding of the context of FAO operations during the implementation of the project.

Through FAO's participation in the UN Country Team (UNCT) and Humanitarian Country Team (HCT), the development of the political situation in the WBGS will regularly be monitored and reviewed in line with project objectives. FAO contributes to policy-level initiatives to protect Palestinians from further reduction in access to land, sea and livelihood resources (e.g. water and agricultural inputs) owing to the political situation, through its participation in the UNCT Commendation Group and HCT

[15] http://www.fao.org/docrep/005/v9878e/v9878e00.htm

[16] http://www.fao.org/docrep/003/W4493E/W4493E00.HTM

Advocacy Working Group. All advocacy efforts will be conducted under the banner of the UN in the WBGS to ensure that FAO's mandate is not compromised.

Relating directly to project formulation and implementation, the Risk log (See ANNEX 4) is an important tool, which the FAO project team will continuously monitor and update when necessary. In-depth reviews will take place during periods of progress reporting. The FAO project team will keep project partners (including donors, MoA etc.) informed about significant residual risk exposures that might affect them.

2.2 Implementation and management arrangements

2.2.1 Institutional Framework and Coordination

Institutional Framework

All activities related to the project implementation will involve the following Public Institutions:

- Ministry of Agriculture;
- Ministry of Transport;
- Ministry of Labour;
- Ministry of Health;
- Palestinian Water Authority;
- Palestinian Land Authority;
- Ministry of National Economy;
- Palestine Standards Institution.

Ministry of Agriculture

The MoA is the competent institution for managing the fishing and aquaculture sector which includes activities related to policy making and planning for organizing and developing the sector. General responsibilities include: the regulation of fishing licenses, boat construction, collecting data and information, protected species, regulation of fishing activities (in time and space), records of losses and damages encountered by fishermen and subsequent compensation, executing and supervising programs aiming at supporting fishermen, amending laws and legislation, inspection operations to guarantee the implementation and the enforcing of the laws, ensuring the safety and quality of the fish produce in markets and auctions. Moreover, the MoA are currently in the process of writing new by-laws for the zoning and licensing of "sea space" along the Gazan coastline for the purposes of managing marine aquaculture activities.

The MoA is the primary government counterpart for this project and will act as the focal point for collaboration with other line ministries and standards agencies as required that are not mentioned specifically below (i.e. Ministry of Health, PWA and MoNE). The MoA will be involved throughout the project implementation. This strong involvement serves to ensure alignment with MoA strategies, policies and priorities, in addition to ensuring the continuity of MoA supervision and support to the targeted cooperatives beyond the project implementation period.

During the implementation phase, the MoA will be fully involved through identifying specific technical trainings for all stakeholders (including the DoF of the MoA), as well as through ensuring regulatory coherence in implementation. Specifically under Output 2, capacities of the MoA and other institutions will be developed in order to enhance their delivery in providing an enabling environment for fisheries and aquaculture development.

Ministry of Transport

In terms of the fishing sector, the Department of Boat Registration within the Ministry of Transport provides technical inspections of fishing boats, issues and renews boat licenses, ensures the quality of

security and safety conditions such as the signaling and rescue equipment on boat. It also facilitates work related to infrastructure at the Gaza Harbor.

Ministry of Labour

The MoL registers agricultural cooperatives and develops strategies and laws for cooperative work. As given in its mandate, MoL seeks to enable horizontal and vertical value chain coordination for cooperatives and other businesses.

Coordination

FAO is involved in several coordination mechanisms among UN agencies and civil society organizations. As for the UN, all development programmes are implemented through UNDAF, where FAO is the lead agency for Output 1 (of UNDAF 2014-2017) on economic empowerment. Other coordination mechanisms where FAO participates are the Local Aid Coordination Secretariat's (LACS) Agriculture Sector Working Group and Environment Sector Working Group. Coordination is pivotal in ensuring complementarity and delivery of impact.

2.2.2 Strategy/Methodology

Intervention Strategy

The project is focused on strengthening the resilience and livelihoods of Gazan fishing communities. The project is expected to ultimately result in new opportunities for improved incomes by the introduction of modern, off-shore fish production techniques. This will lead to new economic opportunities in the fisheries and aquaculture value chain, which will contribute to enhanced, sustainable livelihoods and food security for the Palestinian people.

As identified in the rationale (see section 1.1.1), the fisheries subsector in Gaza is under severe strain; it lacks modern infrastructure, investments, access to new assets and materials and support and guidance structures from the public sector. This context is largely due to the ongoing political crisis and imposed blockade; yet smart investments along the value chain will build private sector resilience and maintain profitability and succession of livelihoods for future generations. Within this context, the project aims at breaking the vicious circle of underinvestment, low productivity and low income by promoting the establishment of off-shore marine aquaculture and extensive stakeholder capacity development.

Cage Farming

Initial studies and technical missions performed by FAO and International Labour Organization (ILO)[17] in recent years have explained the theoretical gain of investing in modern off-shore production techniques and local fry production to substitute imports. Moreover, FAO's latest technical mission with cage culture and marine hatchery experts (October, 2015; See ANNEX 6) has also confirmed the technical and economic feasibility taking into consideration the inherent risks identified in this document (see section 2.1.1, ANNEX 4).

As such, this project seeks to demonstrate a new approach in high value fish production through off-shore cage farming in collaboration with the existing fisheries cooperatives (according to the technical design as given in ANNEX 6). In order to also ensure social feasibility and equitability, FAO will facilitate the creation of a social business. This will take place in parallel with the preparatory coordination efforts to establish the offshore cage farm. The social business will be established as an autonomous, profit-seeking entity, with trained local technicians to manage operations. Yet, this business will be set within the organization structure of the fisheries member institution(s) ensuring that the wider fishing

[17] ILO Fisheries and Aquaculture Value Chain Assessment, the Gaza Strip

community will have ownership of the business. Under this arrangement, a large section of Gaza's fishing communities, of whom the fisheries member institutions represent, will become shareholders of the cage farm entitled to income to be generated.

The social business will have separate legal, organizational and management structures and be headed by a managing director appointed through a competitive process. The board of the social business company will include some or all of the following: representatives from government, academia and private sector in a consultative capacity as non-voting members. Moreover, the social business will be designed to potentially allow for future investments by other private sector actors, in particular the current on-shore aquaculture producers. All institutional arrangements for the social business mentioned above will be finalized during the initial stages of the project.

Below are the key benefits to adopting this social business intervention strategy:

- Demonstration of equitable modernization of the fisheries sector: through ensuring a wider distribution of sector modernization benefits
- Ownership by the wider fishing community and a model for possible future investments by private actors

Given the level of investment required for this initial demonstration farm, and the substantial technological jump from current fishing activities in Gaza, it's imperative that a right-first-time strategy be adopted regarding the technical cage farm design (see ANNEX 6 for details and technical drawings of the proposed cage farm). This will also be the case for the capacity building initiatives needed to reach the required skill level for local technicians. Off-shore cage farming is a complex activity requiring highly technical skills and advanced business acumen to ensure safe and sustainable production and profitability. As such, an international partner with in-depth cage farm construction and professional training experience will be recruited, by a competitive process, to provide a 'turn-key' cage farm product and all associated training and capacity building efforts. Capacity building will involve hands-on coaching and technical training on all cage farm installation and operational procedures, professional sea-diving courses and financial management aspects at existing cage farm facilities in the Mediterranean. FAO West Bank and Gaza Strip will be supported by the Fisheries and Aquaculture division in FAO HQ regarding the identification of the most capable service providers for cage installation and all training activities.

In parallel with the production level investments (cage farm), FAO will support the elaboration of legal and institutional frameworks necessary for facilitating sustainable marine fish farming development. Moreover, the project will work towards upgrading the human resource capabilities within the related ministries in support of better related monitoring and advisory services.. Though various coordination efforts, currently ongoing in other value chain programs in the Gaza Strip, FAO will also promote access to West Bank and external markets.. This strategy will also support dialogue between private and public stakeholders allowing greater understanding in terms of what is required for marine fish farming development.

Ownership and Institutional Anchorage

As explained above, local ownership and capacity enhancement is paramount for the successful demonstration of the new production technique and the over impact of the project. Therefore public institutions and fisheries member institutions will be involved in the project. Stakeholder involvement, participation and mobilization will be ensured during the planning, execution, and post-implementation phases. The continuous involvement of the communities will at the early stages lead to a refined implementation approach to be defined during the inception phase of the project.

During the initial stages, plans for the cage farm social business will be developed by the targeted groups with supervision and support from the JTT including representatives of the DoF of the MoA, and FAO. The social business plans will include a business concept description; market analysis and economic feasibility; identification of materials and supporting infrastructure, technical assistance,

trainings and extension services needed; financial features and requirements; definition of roles and responsibilities; risk analysis; and future development strategies. Moreover, detailed descriptions of the ownership, legal statutes, and management and cost-share arrangements for the facility will be defined and formally agreed upon. These and other operational arrangements will be formalized through operational agreements that ensure benefits, roles, responsibilities and accountability for the involved stakeholders.

As mentioned above, FAO will support the DoF and other relevant public stakeholder to develop some of their technical and support capacities. The fisheries member institutions will similarly be supported to improve their technical and functional capacities. In terms of further institutional anchoring, the MoA and other governmental and non-governmental institutions will be closely involved in project implementation (See section 2.2.1 *Institutional framework and coordination* for public institutions and section 1.1.4 *Stakeholder Consultation and Engagement* for NGOs).

Flexibility/adaptive management

Being a two year project, the planned interventions will be subject to changes in context in terms of risks and assumptions and possibly even the relevance/feasibility of specific activities (applicable to activity 1.2 and 1.3 specifically). In this regard, it is of utmost importance that the strategy and methodology defined in the workplan are flexible enough to accommodate for contextual change, in order to ensure the overall delivery of impact. There is a set of integrated and dynamic tools (Logical framework, Risk Log and Workplan) to facilitate this process which is further defined in section 2.3 *Monitoring, performance assessment and reporting.*

2.2.3 Technical Support

FAO, utilizing the expertise of FAO's Fisheries and Aquaculture Division, will provide technical backstopping and follow-up closely on implementation progress and ensure delivery of technical outputs and outcomes, and undertake regular backstopping missions, providing clearance to:

i) Terms of Reference of consultancies, letters of agreement and contracts;

ii) Selection of the consultants;

iii) Technical reports and financial reports.

Technical guidance and backstopping will be provided by the related FAO technical units at regional level (RNE) and FAO HQ. This will include frequent support visits by the technical officers concerned to review progress being achieved which will inform overall project planning.

FAO will also:

(i) review and provide clearance to the project progress and final reports prepared by the project management team;

(ii) prepare annual Project Implementation Review (PIR) to be reviewed and cleared;

(iii) at least one annual project supervision field mission.

2.2.4 Government Inputs

The Palestinian Government, and MoA in particular, will be involved throughout project duration and with regard to all activities as described in detail in section 2.2.1 *Institutional Framework and Coordination* and ANNEX 2 and 3. Government in-kind contribution will include making staff and venues available for trainings, extension services, coordination and supervision services etc. Additionally, the MoA will jointly co-lead the JTT of the project with FAO (See section 2.2.6 *Management and operational support arrangements*).

The following are necessary actions to be taken to ensure proper implementation of the project from the Palestinian Government:

- Identification of staff that will participate in the project in Gaza Strip;
- Support to identification of technicians to be supported;
- Formal allocation of the sea site needed off-shore cage farm.

The project will depend on the commitment of the Palestinian Government and competent institutions to translate project outputs into outcomes, by mobilizing local support for the project's objectives and working in partnership with the private sector.

2.2.5 Resource Partner Inputs

The resource partner will provide funding to allow the complete implementation of all activities described in this document and summarized in the Logical framework.

2.2.6 Management and Operational Support Arrangements

FAO WBGS operates out of three offices: the main office is situated in Jerusalem, with two sub-offices located in Ramallah and Gaza City. It implements its programme through a team of 45 employees comprising 80 percent national staff, complemented by short-term expertise drawn from within and outside FAO.

Project management and operational support

An inception phase will take place during the first 3 months of the project during which the final identification and operational design of the activities and set-up of the project team will be established, the workplan refined and the project formally launched. All planned activities will be implemented during the 2 years as outlined in the Workplan (See ANNEX 2:).

FAO's project management team will be responsible for the day-to-day project operations and ensures the coordination and execution of the project through timely and efficient implementation of agreed work plans, in close consultation with FAO management and the JTT. The project management team will consist of a Lead Technical Consultant (LTC) assisted by a National Project Coordinator (NPC) as outlined below. Both will be under direct technical supervision of the FAO Head of Programme and overall supervision of the FAO Head of Office.

Lead Technical Consultant (LTC)

The LTC will be a consultant selected by FAO through a transparent and open selection process.

The LTC will:

(i) Coordinate the execution of project activities and reporting focusing on the development of management plans, socio-economic and ecological monitoring activities and follow up recommendations and participatory mapping of resources and stakeholders;

(ii) Formulate tenders and provide technical backstopping for the management of contracts for all implementing partners and stakeholders;

(iii) Lead on the management and implementation of all local and international capacity building initiatives;

(iv) Provide input to ToRs and supervise the output and performance of all technical consultants;

(v) Provide technical workshops to stakeholders on policy, decision making, and investments for fisheries and aquaculture value chain in the Gaza Strip;

(vi) Develop a multi-stakeholder information center with support from the project team.

National Project Coordinator (NPC)

The NPC will be a part-time position selected by FAO through a transparent and open selection process. The NPC will work closely with the LTC and will perform the following tasks:

(i) Responsible for the day-to-day management of the project and the overall planning, coordination of project activities, and monitoring of project results;

(ii) Contribute to the delivery of outputs under the technical assistance components;

(iii) Provide inputs in the preparation of project technical reports, working with consultants and institutions contracted by the project;

(iv) Facilitate, prepare and implement training and capacity building activities working closely with stakeholder focal points;

(v) Call for meetings of the JTT as and when required and act as resource person for the Strategic Review Meetings;

(vi) Promote close collaboration between the project and relevant ongoing and planned Government initiatives.

Technical Consultants

The following list is an example of the technical Consultants required as part-time staff to be selected by FAO through a transparent and open selection process for insuring adequate technical expertise to the project:

(i) Fisheries development expert;

(ii) Cage capacity building specialist;

(iii) Fish pathologist;

(iv) Social business expert (business, legal and operational frameworks an socio-economic analysis)

The international consultants assigned to the project will receive technical guidance from the Fisheries and Aquaculture division in FAO Headquarters and Regional Operations Branch to ensure high quality of technical assistance and advice.

In addition, the Head of Office and Head of Programme will allocate part of their time to provide overall and technical supervision to the project team to ensure alignment, proper coordination as well as quality and timely delivery of planned results. The administrative and operational personnel will contribute part of their time to support the implementation of this project.

Joint Technical Team (JTT) and Strategic Review Meetings

The project will facilitate the creation of platforms of dialogue to promote synergy, information flow and coordinated implementation of the project with local communities and national expertise, aiming at building capacity for sustainable development. During the inception phase of the project, a JTT will be established and its Terms of Reference (ToR) drafted. A general description of the ToR is given below. This coordination will be institutionalized capitalizing on previous and existing successful models between the MoA and FAO.

TORs for the JTT:

The JTT will consist of technical officers from the MoA, FAO and other stakeholders and partners involved in the implementation of all outputs of the project.

The JTT will be led by the MoA and FAO and will promote an integrated programmatic approach. Field implementation components of the project will be informed by assessment of past and present experience of agencies establishing similar large-scale, high-tech facilities in the Gaza Strip.

The main functions of the JTT will include the following:

1. Support effective and efficient implementation of technical project activities based on best practices and in alignment with the National Agriculture Sector Strategy and sub sectoral strategies
2. Ensure a continuous information flow mechanism that can manage and disseminate project outputs and lessons learned among all stakeholders, through an efficient communication system and facilitation of workshops
3. Coordinate advocacy outputs of the project in order to reduce obstacles to successful implementation, including consultation with legal focal points within the MoA and other agencies, promote interest among donors and other stakeholders.

Strategic Review Meetings

Moreover, Strategic Review Meetings between FAO and the Donor will be organized annually and on an ad-hoc basis upon request of one of the two parties. Other relevant project stakeholders (e.g. stakeholders from government, local authorities, civil society and private sector) can be invited to participate in the meetings if one of the two parties so requires.

The Strategic Review Meetings will:

- Review progress and emerging issues in project implementation;
- Provide strategic direction and make recommendations to guide project implementation;
- Advise on potential linkages with other stakeholders so as to promote ownership, enable synergies and avoid duplication or overlap;
- Address any other issue as requested by one of the two parties.

2.3 Monitoring, performance assessment and reporting

2.3.1 Scope and purpose

The Workplan (see ANNEX 2), Budget (see ANNEX 3), Logical framework including progress indicators and assumptions (see ANNEX 1), and Risk log (see ANNEX 4) are a set of integrated tools, which will be used for planning and management of the project, including for monitoring, performance assessment and reporting. These tools are dynamic and will be reviewed regularly and adjusted when necessary in order to enable the project to deliver agreed results even in the face of developing challenges and change in project context and/or needs. Project monitoring includes systematic collection and review of data relating to the baseline and subsequent achievement of the indicator targets established, the continued relevance of the assumptions, and of the risks and risk mitigation actions.

2.3.2 Focus on the achievement of results (Outputs and Outcomes)

Monitoring is an integral feature of managing for results[18] and is a key element of FAO's work to support and facilitate proactive management, continuous improvement, lessons learned and knowledge management.

[18] Managing for Results is a management strategy that involves using information about results to systematically improve decision-making and strengthen performance in meeting objectives. It means ensuring that all initiatives, from individual projects through national development strategies, are designed to generate performance information and use it for continuous improvement.

The Logical framework and its indicators will serve as the basis for monitoring the progress in project's implementation and achievement of outputs. This can be adjusted during the project life to reflect possible changes in the project and its operating environment.

Narrative progress and final reports will be prepared by the FAO project management team, reviewed by FAO Technical Services and submitted to the donor as per the schedule set out in the project (funding) agreement(s). Interim and final financial reports will be prepared by FAO and submitted to the donors as stated in the project agreement(s).

Project results also feed into the assessment of FAO's overall progress against its PF for the WBGS 2014-2017 (reported on annually), which in turn feeds into corporate results-based monitoring against FAO's global corporate Strategic Framework.

2.4 Communication

Communication activities will focus on the results, impact and lessons learned of the project targeting general and specific audiences in the country as well as abroad. Target audience will typically include the MoA, other governmental institutions, donors, UN agencies, NGOs, and targeted beneficiaries. Communication actions will be aligned with FAO's corporate communication strategy and will benefit from the existing expertise and facilities of the Organization's Office of Corporate Communications and External Relations (OCE). Logo usage will comply with these guidelines as well as consider any additional requirements of project donors and other partners.

Visibility to relevant stakeholders will be ensured through project updates at stakeholder meetings and while participating in sector committees. Committees include LACS' Agriculture Sector Working Group, the European Commission's 'Friday Group', the Environment Sector Working Group as well as regular meetings with the PA ministries, international and local NGOs and community based organizations, among others.

Communication and visibility instruments to be used include publication of press releases on the FAO and the Agricultural Projects Information System (APIS) websites, referenced on partner websites and local media platforms. Other channels for communication and visibility will include kick-off events, trainings and workshops as well as the generation of knowledge products. All knowledge products (e.g. publications, videos, presentations, images) in available official languages (English and Arabic) will be appropriately shared and preserved through FAO's repositories or other appropriate channels including PA institutions, university libraries, fisheries member institutions, and national and international media. The donor will be acknowledged and highlighted in these products as well as at each event verbally and through placement of signs.

2.5 Provision for evaluation

In compliance with FAO policy on evaluation and in consideration of its budget size, no separate evaluation of the project is anticipated. However, the project will contribute to the OED-managed Evaluation Trust Fund and will potentially be evaluated through a cluster approach, along with other projects that share one or more of the following characteristics: theme and/or approach, geographical area of intervention, resource partner. To this end, adequate provisions for evaluation have been included as direct project costs as part of technical support provided by FAO.

Section 3 Sustainability of results

3.1 Environmental sustainability

In accordance with FAO's Blue growth initiative principles, the sustainable use and conservation of aquatic and land-based renewable resources must be explained and adopted via the project activities in an economically, socially and environmentally responsible manner, reconciling the priorities between growth, conservation and ensuring equitable benefits for Gaza's coastal communities. The project will promote an ecosystem-based approach to aquaculture[19] as explained through the management of environmental and social risks in the context of the project outlined in Section 2.1.2 *Environment and Social Risks*.

From a climate change perspective, cage farming relies on ocean currents to replenish water and maintain oxygen levels in the cages and therefore uses minimal fossil fuels as compared to on-land aquaculture production. The project can therefore contribute to mitigation of climate change through the introduction of a low carbon aquaculture technique.

3.2 Gender equality

Palestinian women play a prominent role in agriculture in the WBGS. A gender analysis report carried out by FAO in 2011[20] showed that over 30 percent of informal agricultural work is done by women as part of their domestic responsibilities. Palestinian rural women also contribute largely to extensive chores, factory work and farm work. Despite this major contribution, 48.2 percent of rural Palestinian women carry out the work unpaid, which means that their production is not captured in the GDP and that they are not considered as part of the workforce. Moreover, women do not control agricultural revenue which leads to marginalized roles within the production process. For the fisheries and aquaculture subsector in Gaza, duties performed by women are mostly limited to the maintenance of various fishing net types, food processing and marketing, as men tend to dominate the activities involved with catch/aquaculture. This is largely due to the succession of asset ownership traditionally passed down through patriarchal lineages.

FAO puts the mainstreaming of gender and women's economic empowerment as a core issue within its strategic programming, project design and implementation, budgeting, as well monitoring and evaluation. All monitoring, reviews and reporting will be based on SMART and gender sensitive indicators and targets ensuring accountability and coherence with gender mainstreaming throughout the project. Mainstreaming gender and environment within FAO's programming is based on socio-economic/environmental assessments and analysis, utilizing a range of tools and analytical modules that are tailored to the WBGS context. FAO's gender focal point, supported by FAO's gender committee will play a key role in assuring that women and men associated with the project stakeholders (fisheries cooperatives, MoA staff) have equal opportunities to participate in and benefit from the project's activities at all levels.

3.3 Indigenous peoples

Not applicable.

[19] http://www.fao.org/docrep/013/i1750e/i1750e00.htm

[20] FAO, 2011: Palestinian Women's Associations and Agricultural Value Chains. Rural employment – Case studies series, No 2.

3.4 Human rights based approach (HBRA). Including right to food, decent work and accountability to affected populations

FAO will take all necessary measures and actions within its mandate to ensure full respect for and compliance with human rights and other relevant international laws and standards. Within FAO's mandate, this particularly relates to the Right to Food and Decent Rural Employment.

Right to food

In this project, due consideration is given to addressing the viability of a future Palestinian State with sustainable access to, and control over, its food supplies. More specifically, the project will work to strengthen capacities to produce and trade food products in order to enable a viable economy and stable employment and thereby realize the *right to food*[21] in accordance with international standards and based on the Right to Food Guidelines adopted by FAO in 2004 and related PANTHER principles[22].

Decent work

The creation of productive, decent and equitable employment is key to enabling the poor to escape from poverty. It is a powerful driver for building economic resilience as labour is often the only asset that poor fishers own. Gazan labour markets, particularly within the agriculture sector, are distinguished by high levels of informality, a multitude of casual employment relationships, high rates of self-employment, labour force fragmentation, information asymmetries, and the uncertainties and specificities characteristic of agricultural production.

FAO has a long experience with addressing employment in the agriculture sector – particularly with regards to agricultural employment, employment in agro-processing and marketing enterprises and industries, and with employment in the informal economy.

The project will address the four pillars of decent employment in the following way:

Pillar 1: **Employment creation and enterprise development**
The newly established cage farm facility with generate new and sustainable employment for fishers associated with Gaza's fisheries member institutions. The increased incomes, productivity and profitability generated from this innovative production technique will encourage new enterprise development within this sector.

Pillar 2: **Social protection**
Occupational safety, health and welfare measures will be promoted as part of the technical training courses provided by FAO and implementing partners.

Pillar 3: **Standards and rights at work**
Relevant ministries will be enabled to strengthen their engagement with and support to the fisheries and other associated cooperatives and aquaculture-based MSMEs.

Pillar 4: **Governance and social dialogue**
Policy and regulatory frameworks will be formulated to address marine aquaculture development identified through a participatory process during project implementation.

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[21] In 1999, the right to food was interpreted by the Committee on Economic, Social and Cultural Rights (CESCR) in the General Comment 12 establishing that: "The right to adequate food is realized when every man, woman and child, alone or in community with others, has the physical and economic access at all times to adequate food or means for its procurement."

[22] The PANTHER framework stands for Participation, Accountability, Non-discrimination, Transparency, Human dignity, Empowerment and Rule of law.

Accountability to affected populations

In line with the 2011 decisions of the Inter-Agency Standing Committee (IASC) Principals, FAO has acknowledged the fundamental importance of Accountability to Affected Populations (AAP). FAO's approach to AAP provides a framework for addressing and integrating issues such as gender equality, protection, the inclusion of the aged and people living with disability, and the prevention of sexual exploitation and abuse by FAO and partner staff. The project seeks to engage with targeted stakeholders and mainstream FAO's AAP commitments[23] in each phase of the project cycle.

FAO maintains its AAP commitments in the following ways throughout the project cycle:

- **Identification:**
  - Alignment with national strategies;
  - Continued consultations with stakeholders and integration of lessons learned from previous reviews (see Section 1.1.4 on *Stakeholder engagement*).
- **Project Formulation:**
  - Continued consultation with MoA, local authorities, potential IPs and other project stakeholders (see Section 1.1.4 on *Stakeholder engagement*).
  - Donor consultation.
- **Implementation and Monitoring:**
  - Establishment of relevant project bodies (JTT) to ensure coordination and information sharing among stakeholders throughout project implementation.
  - Mobilization of potential beneficiaries with information on details of interventions and selection processes.
  - Ensuring transparency of beneficiary selection processes.
  - Receipt and handling of grievances in order to facilitate the resolution of potential concerns of beneficiaries/stakeholders.
  - Regular field visits, beneficiary consultations and beneficiary trainings.
- **Evaluation:**
  - Final evaluation including accountability aspects and reporting donor.
- **Closure:**
  - An "exit strategy" is considered throughout the phases (see Section *Capacity development*).

3.5 Capacity Development

FAO considers capacity development as one of the most important means of achieving sustainable value chain development. FAO's corporate approach to capacity development[24] emphasizes support to country and stakeholder-led processes, consistent with national priorities and the local context, and the need for different and complementary points of entry: the enabling environment as well as the organizational and the individual level.

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[23] FAO 2013. Guidance Note on Accountability to Affected Populations: http://www.fao.org/fileadmin/user_upload/emergencies/docs/Guidance%20Note_Accountability_Publi.pdf

[24] See: http://www.fao.org/capacity-development/our-vision/en/

FAO's portfolio of capacity development activities is broad, and trainings; coaching and mentoring; organizational development; coordination between actors; and support to policy formulation, which are integrated throughout the outputs of the project.

The series of capacity building initiatives directly targeting the technical and management staff of the proposed off-shore cage farm are incorporated under Output 1, activity 1.3. Whereas more cross-cutting issues including: 1) essential public sector policy formulation and decision-making for marine fish farming, 2) enhanced competencies of MoA and other institutions on aspects of marine aquaculture and off-shore cage farming are at the core of Output 2, activity 2.1 and 2.2.

Hands-on training for the cage farm technicians is essential for the overall success of this project. As such, FAO will ensure that the best training facilities are identified in the Mediterranean to facilitate the transfer of technical knowledge and best practices. FAO will also ensure the implementing partners providing the 'turn-key' farm will provide further hands-on training to the technicians, once they've returned from their intensive course abroad, for an extended period after the facilities are installed. Finally, FAO will ensure the technical consultants hired during the project can provide further technical support and ad hoc training when required throughout the project timeline.

Capacity development is also a means to ensure sustainability of results, ensuring that the intervention is long-term and that there is something left behind to continue building on. To this end, the strengthening of both technical and functional capacities is crucial. Strengthening functional capacities within the newly established social business and supporting public intuitions will enable them to lead and manage future investment initiatives improving overall sector performance. Furthermore, it is essential to consider the financial sustainability of the proposed production facility in order to for the cage farm investment to lead to sustainable productivity and livelihoods after the duration of the project. The analysis of the cage farm facility is presented in ANNEX 6 which provides details and economic indicators highlighting profitability, cost/benefit ratios and return on investment.

For business plans to be developed by the fisheries member institutions during the initial stages of the project: the targeted groups will be supported to develop a long-term financial management strategies, forecasting cash flow and managing accounts receivable and payable to ensure that sufficient funds are available to pay for variable and maintenance costs. The financial sustainability arrangements defined in the business plans will include future fundraising strategies that will consider the diversification of funding resources through enabling the access to credit services which will ensure business viability and promote financial sustainability. When it comes to the supported investments, the target groups will be responsible for maintenance as will be defined in the respective agreements.

The economic viability of the new production system (cage farm), coupled with FAO's technical and functional capacity development support and the support towards mobilizing additional funds and/or access to credit, is expected to support a successful exit strategy and ultimately enable the social business' self-sustainability and continuous development after project duration.

ANNEX 1: Logical framework

RESULTS CHAIN		INDICATORS				ASSUMPTIONS
		Indicators	Baseline	Target	MoV[25]	
Impact	Income sources for Gazan fishing communities are sustainably diversified and local availability of quality fish for consumption is improved	Off-shore cage fish production capacity in the Gaza Strip (kg) Social business forecasts net revenues within two years from the establishment of the cage farm	0 No	150,000 Yes	MoA Dep. of Fisheries Social business records	• Political, security and access conditions in the Gaza Strip do not deteriorate to a level that would hamper the project implementation.
Outcome	Gazan fishers are enabled to use a new approach in high value fish production through off-shore cage culture social business	Off-shore cage farming is in place and functional Difference in estimated production costs per unit of cage farm compared to that of land-based approaches	No N/A	Yes 20% less	Project reporting MoA Directorate of Fisheries	• Conditions for movement and access of agricultural inputs and goods do not deteriorate. • Government allocates the sea site for the cage fish farm and remains committed to providing the necessary services to the targeted cooperatives and communities. • Buy-in and ownership of the targeted stakeholders and communities continue. • Training and capacity building for the facility's local technicians is sufficient enough to allow for effective long term management.

[25] MoV – Means of verification

RESULTS CHAIN		INDICATORS				ASSUMPTIONS
		Indicators	Baseline	Target	MoV	
Output 1 *PF Output 2.1, 2.3* *SO5 Output 5.4.3*	An off-shore cage culture farm is installed and capacities of the fisheries member institution(s) are developed to manage it as a social business	Off-shore cage farm provided and installed	*No*	*Yes*	Project reporting	• Access to optimal cage-farm zones (2-3 nautical miles off shore) areas remains possible for entire duration of project implementation. • All local authorities continue to support their initial agreement to establish and gain continual access to the off-shore cage farm. • Professional international aquaculture company can be identified and is willing to work and make operational the farming facility in the Gaza Strip rather than simply supply goods. • The targeted fisheries member institutions have the legal capacity to establish a social business within its existing organizational frameworks. • Communities and related public institutions are willing and able to contribute and participate in the project. • Ability to import cage farm materials and equipment for installation remains. • Climatic and oceanographic conditions remain conducive for cage farming.
		Social business established and managing the cage farm	*No*	*Yes*	Project reporting	
		# of training and capacity building courses completed	*0*	*4*	Project reporting	
		Total number of beneficiaries	*0*	*2000*[26]	Project reporting	
Activity 1.1	Establish a social business as an autonomous enterprise within the fisheries member institutions					
Activity 1.2	Provide and install an off-shore cage culture farm[27] in collaboration with the fisheries member institutions					
Activity 1.3	Provide training and capacity development for cage farm and social business management					

[26] This is the number of active members in the Fishermen's Union who will own the social business

[27] As explained in section 2.1.1 – *Significant risks facing the project*, if all risk mitigation strategies fail and thus it's highly unlikely that a cage farm will be established within the project timeline, an on-shore fish farm will be established instead adhering to the exact same intervention strategy/methodology as given in section 2.2.2.

RESULTS CHAIN		INDICATORS				ASSUMPTIONS
		Indicators	Baseline	Target	MoV	
Output 2 *PF Output 2.1, 2.2* *SO5, Output 5.3.2*	Capacities and enabling environment reinforced in support to marine fish farming	# of national policy/strategy processes supported	*0*	*2*	Project reporting	• The targeted stakeholders continue being willing and able to contribute and participate in the project.
		Oceanographic data collected by designated institution	*No*	*Yes*	Project reporting	
		# of capacity building trainings	*0*	*8*	Project reporting	
Activity 2.1	Support essential public policy formulation and decision-making for marine fish farming					
Activity 2.2	Capacity development of the MoA and other institutions to enhance the quality of related services					
Activity 2.3	Enhance coordination among key actors in the fisheries and aquaculture value chain towards better access to local and external markets					

ANNEX 2: Workplan

INCEPTION PHASE	Months		
	1	2	3
Finalization of the ToR for the JTT			
Formation of the JTT			
Development of ToRs for staff, experts and missions			
Recruitment of staff and experts			
Community mobilization, preliminary needs assessments and partnership building			
Project launch event			

WORKPLAN ACCORDING TO ACTIVITY PER OUTPUT				
Activities	Years			
	1		2	
	1/2	2/2	1/2	1/2
OUTPUT 1: An off-shore cage culture farm is installed and capacities of the fisheries member institution(s) are developed to manage it as a social business				
Activity 1.1: Establish a social business as an autonomous enterprise within the fisheries member institutions				
a) Desk review to identify the correct legal statutes and procedures for establishing a social business in the Gaza Strip				
b) Draft and finalise the official documentation to create a social business including all necessary organisational, management and ownership structures				
c) Create the new social business and provide capacity training to ensure a functional and highly component management structure and HR is in place				
Activity 1.2 Provide and install an off-shore cage culture farm in collaboration with the fisheries member institution(s)				
a) Work of MoA and other related actors to identify and confirm an optimal off-shore cage farm location including all additional infrastructure required at the Gaza port in collaboration and coordination with all relevant authorities				
b) Coordinate with all relevant authorities to confirm the successful entry of all materials and technologies given on the farm Bill of Quantities				
c) Complete an international tender for the engineering design and specifications for cage farm procurement including installation and extensive technical training and capacity building services by a reputable Mediterranean-based service provider				
d) Installation of off-shore cage farm supervised by FAO staff and by qualified technicians from winner of international tender				
e) Provision of in-kind contribution to the initial start-up needs				
Activity 1.3: Provide training and capacity development for cage farm and social business management				
a) Identify optimal Mediterranean-based training facilities for all technical trainings required for the successful management of the cage farm by local staff				
b) Coordinate the training of cage farm technicians on diving skills required for cage farm management and maintenance				

WORKPLAN ACCORDING TO ACTIVITY PER OUTPUT				
Activities	Years			
	1		2	
	1/2	2/2	1/2	1/2
c) Coordinate a technical, hands-on training of local technicians on year-round cage farm management and maintenance at a reputable Mediterranean-based farm facility				
d) Enhance capacities of local technicians on aspects of cage farming via on-the-job training at the newly established cage farm				
e) Initial business administration training and coaching for the social business management team including technical workshops on sales and marketing etc.				
OUTPUT 2: Capacities and enabling environment reinforced in support to marine fish farming				
Activity 2.1: Support essential public policy formulation and decision-making for marine fish farming				
a) Support essential public policy/strategies for the licencing, zoning, regulation and development of marine fish farming in the Gaza Strip				
Activity 2.2: Capacity development of MoA and other institutions to enhance quality services				
a) Essential technical support and capacity development for the Dept. of Fisheries and other stakeholders on environmental and technical aspects of marine aquaculture technologies.				
b) Assess needs and deliver in kind (i.e. a boat and other equipment) and technical support to the appropriate public institution to perform the essential oceanographic parameter measuring for off-shore cage farming and ensure basic fish health diagnostic services.				
Activity 2.3: Enhance coordination among key actors in the fisheries and aquaculture value chain towards better access to local and external markets				
a) Promote focused dialogue between fisheries and aquaculture value chain actors to enhance coordination, successfully integrate new production technologies and avoid market failures				
b) Promote access to West Bank and international markets, and identify fish products with best export potential.				

ANNEX 3: Budget

					Year 1		Year 2	
Item description	Quantity	Unit	Unit cost	Total cost	Quantity	Total cost	Quantity	Total cost
PROJECT MANAGEMENT								
Lead Technical Consultant/International	20	month	$ 8,550	$ 171,000	11	$ 94,050	9	$ 76,950
National Project Coordinator	12	month	$ 3,500	$ 42,000	6	$ 21,000	6	$ 21,000
Travel for Lead Technical Consultant including tickets and DSA	9	trip	$ 1,187	$ 10,680	4	$ 4,747	5	$ 5,933
OUTPUT #1: CAGE FARM COMPONENT								
I. Establishment and operations								
Procurement of cage system with fish rearing pen, anti-predator protection net, mooring system and a farm work-boat including welding and installation by professional divers	1	cage system	$ 531,400	$ 531,400	1	$ 531,400		
Support to cage farm initial runnning costs	1	lumpsum	$ 325,600	$ 325,600	0.3	$ 103,200	0.7	$ 222,400
II. Training and Technical Oversight								
Technical supervision, backstopping and support by FAO	60	day	$ 1,158	$ 69,480	40	$ 46,320	20	$ 23,160
Travel including tickets and DSA	4	trip	$ 1,776	$ 7,104	2	$ 3,552	2	$ 3,552
a. Cage management and maintenance								
Practical diving courses (3 people/2 months)	6	month	$ 6,500	$ 39,000	6	$ 39,000		
Training in cage farm management/maintenance (3 people/3 months)	9	month	$ 12,000	$ 108,000	9	$ 108,000		
Travel for trainees	6	ticket	$ 1,000	$ 6,000	6	$ 6,000		
b. Cage farm operations								
Trainer - Cage Capacity Building Specialist	3	month	$ 8,400	$ 25,200			3	$ 25,200
Travel for Cage Capacity Building Specialist including tickets and DSA	3	trip	$ 6,330	$ 18,990			3	$ 18,990
Training workshop(s) logistic costs, Gaza	1	lumpsum	$ 3,000	$ 3,000			1	$ 3,000
c. Social business establishment and marketing support								
Social Business Consultant	5	months	$ 9,600	$ 48,000	5	$ 48,000		
Travel for Social Business Consultant	3	trip	$ 2,160	$ 6,480	3	$ 6,480		
Training workshop(s) logistic costs Gaza	1	lumpsum	$ 3,000	$ 3,000	1	$ 3,000		

OUTPUT #2: ENABLING ENVIRONMENT								
I. Establishment and operations								
Oceanography monitoring and laboratory equipment	1	lumpsum	$ 100,000	$ 100,000	1	$ 100,000		
II. Training and Technical Oversight								
Fisheries Development Expert	1	month	$ 8,400	$ 8,400	1	$ 8,400		
Fish Pathologist	1	month	$ 8,400	$ 8,400	1	$ 8,400		
Travel for Fisheries Development Expert and Fish Pathologist including tickets and DSA	2	trip	$ 6,330	$ 12,660	2	$ 12,660		
Technical supervision	30	day	$ 1,221	$ 36,630	20	$ 24,420	10	$ 12,210
Documentation and sharing of achievements and lessons learned	1	lumpsum	$ 5,000	$ 5,000			1	$ 5,000
Training workshop(s) logistic costs, Gaza	1	lumpsum	$ 3,000	$ 3,000	1	$ 3,000		
OPERATING AND ADMINISTRATIVE EXPENSES								
Operational and administrative support services	24	month	$ 7,000	$ 168,000	12	$ 84,000	12	$ 84,000
DSA for travel within Israel, WB and GS	100	days	$ 234	$ 23,400	50	$ 11,700	50	$ 11,700
General operating expenses inc. vehicle operation, fuel and maintenance, supplies, utilities, communications, IT equipment etc.	24	month	$ 4,500	$ 108,000	12	$ 54,000	12	$ 54,000
Reporting and evaluation	1	lumpsum	$ 23,000	$ 23,000			1	$ 23,000
SUB TOTAL				**$1,911,424**		**$1,321,329**		**$ 590,095**
Project Support Cost (10%)				$ 191,142		$ 132,133		$ 59,010
TOTAL				**$2,102,566**		**$1,453,462**		**$ 649,105**

ANNEX 4: Risk log

#	Risk	Explain what could be the worst case impact on FAO if the risk happens	Comment	Impact [28]	Likelihood [29]	Red/ Amber/Green	Mitigation Action	Action Owner	Target Date	Escalated Y/N
1	Substantial deterioration of political situation and eruption of violent conflict.	FAO is unable to implement some of its operations in the Gaza Strip due to security considerations and lack of access to beneficiaries.	The July 2014 conflict in the Gaza Strip took a devastating toll on civilian lives and resulted in an unprecedented amount of damage and destruction to housing and farming units as well as essential infrastructure. Ongoing smaller incidents may lead to tightened security measures.	MH	ML	A	FAO will scale up cooperation with relevant UN agencies and the respective authorities to ensure minimal disruption to activities during periods of conflict. FAO will also mainly operate through the local office, so that field team using UN cards and cars is able to access the targeted sites.	Head of Office, Head of Programme	End of project	N
2	Security related issues and access restrictions regarding the newly established off shore cage farm, particularly during violent escalations	If access to the cage farm is temporarily suspended, this would lead to fish malnutrition and eventual death	During the entire latest large-scale conflict (51 days) fishermen were unable to access the ocean, apart from a small number of humanitarian pauses	MH	ML	A	FAO has obtained written consent from CLA Erez to establish the cage farm. Close coordination will be maintained to ensure maximum possible access at all times.	Head of Office	End of project	N

[28] Impact on project is classified as follows, *High (H)*: Impact that is unacceptable to senior management; *Medium high (MH)*: Impact prompting action by Senior management; *Medium low (ML)*: Impact preventing substantive delivery of intended benefits of the area being assessed; *Low (L)*: Impact preventing substantive delivery of one or more intended outputs of the area being assessed.

[29] Likelihood is classified as follows, *H*: highly likely; *MH*: Significant possibility; *ML*: Some possibility; *L*: highly unlikely

3	A change in policy by key actors regarding the possibility to establish cage farming within the project timeframe or more restrictions on the importation of cage farm construction materials into the Gaza Strip	The establishment of the off-shore cage farm will be delayed or impeded if key materials are prevented from accessing Gaza.	Precedent has been set regarding the successful importation of sophisticated construction materials, currently on the 'dual-use' restricted list, for UN-based interventions once import requirements are shared with all relevant authorities.	MH	ML	A	As noted above, FAO has obtained written consent from CLA Erez to establish the cage farm. Close coordination will be maintained so that all key inputs for the cage culture farm facility can be imported. If all approaches to realizing an off-cage farm within the project timeline fail or are exhausted, an alternative, profitable land-based farm or related business will be established in cooperation with the new fisheries social business according to the intervention strategy as given in section 2.2.2.	LTC and Head of Programme	End of project	N
4	Gazan cage farm technicians are unable to exit the Gaza Strip within the project timeframe for the planned training activities	Cage farm technicians are unable to receive hands-on diving and cage farm management trainings leading to gaps in essential skills	Gazans are required to obtain an exit permit from the relevant Israeli authorities in order to exit the Gaza Strip. Approval rates of exit permits have declined in recent years.	MH	ML	A	FAO will work with all partners to ensure that all cage farm technicians receive the proper visa documentation to attend their technical training activities; if, throughout implementation, it is deemed highly unlikely that the technicians will be obtain exit permits, FAO will modify activities and reallocate resources to bring international trainers to provide the adequate trainings in Gaza instead.	Head of Programme, LTC	End of Project	N
5	Public institutions unwilling to cooperate on sanctioning land and sea space for new production systems (cage farm and pre-fatting facility)	FAO is unable to establish the cage farm in the Gaza Strip	During initial stakeholder discussions all public institutions and ministries confirmed their willingness to collaborate on both production facilities knowing the major benefits both would bring to sector.	H	L	A	FAO will maintain discussions and coordinate with the relevant institutions to ensure continued commitment.	Head of Programme, LTC	End of project	N
6	Fisheries member institutions are unable to secure sufficient finance or access to credit for fish farm production costs before it starts generating net revenues.	If fisheries member institutions are unable to raise sufficient finance or credit they will not be able to achieve the full productive potential of the off-shore cage farm.	During initial stakeholder discussions all fishing cooperatives and key private sector actors expressed their willingness to collaborate to this project. However, the fisheries member institutions need to obtain access to credits and/or financial support in order to	ML	ML	A	FAO will provide facilitation and advisory support to the fisheries member institutions with gaining access to credit and/or finance to ensure production costs are adequately met for the first production cycles.	Head of Programme, Head of Office, LTC	End of Project	N

			cover the running costs of the cage farm for the first years, additional to what is provided under this project.							
7	Delay of procurement/ inability to purchase necessary inputs	inability for FAO to carry out certain activities as planned.	Coordination for the importation of construction materials may lead to delays of procurement processes, especially when materials are being imported from outside Israel and the West Bank.	ML	MH	A	FAO will maintain close relations with all relevant authorities to increase the likelihood of imported materials arriving on schedule. FAO will prioritise local procurement when possible in order to avoid possible delays in imports as well as to ensure access to maintenance services and spare parts.	Operation s Officer	End of project	N
8	Increased frequency and higher severity of climatic shocks affecting off-shore facilities	Large and frequent storms create waves and currents that crush the fish stock in the off-shore farm leading to high mortality ratos	Over the past 5 years, there have been a small number of winter storms that have created currents of up to 2 knots and extreme waves of approximately 10 meters in height, relatively close to the shoreline, which pose significant threats to fish in cages.	MH	ML	A	FAO will ensure that all technical designs for production facilities take extreme climate events into consideration. Regarding the cage farm, fish grow-out cycles will avoid the periods during the year in which storms are frequent to lower the threat of fish loss (January – February)	LTC and Head of Program me	End of project	N
9	Theft or destruction of assets	Theft or destruction would result in reduced and less predictable incomes generated from the cage farm.	Most of the cage farm materials will be located 2-3 nautical miles off the Gazan coastline fully exposed to the physical elements and other fishermen. It won't be technically or economically feasible to try and provide continual security at the farm site thus social risks exist such as theft or destruction of assets by other fishermen. The likelihood of these risks having an impact on the project it is relatively low given that the wider fishing community in Gaza will have ownership of the cage farming social business.	L	ML	G	The social consensus to be built around the social business will ensure social control and peer pressure. To avoid any accidental damages, the cage will be well marked with light signals, etc. The farm location will also be identified in coordination with the Gaza Port Authority and MoA and will be shared with other fishermen to mitigate this threat.			

ANNEX 5: Background Information and Analysis of the Fisheries and Aquaculture Subsectors and the Entire Value Chain in the Gaza Strip

The Fisheries Sector

Gaza's fisheries sector is a significant source of employment, income and a supply of high protein food for the population, in particular Gaza's fishing communities. Yet due to external forces and ongoing access restrictions, fishing households are some of the most affected by food insecurity in Gaza. Over half of this population group are food insecure and have become increasingly so, compared to other population groups.

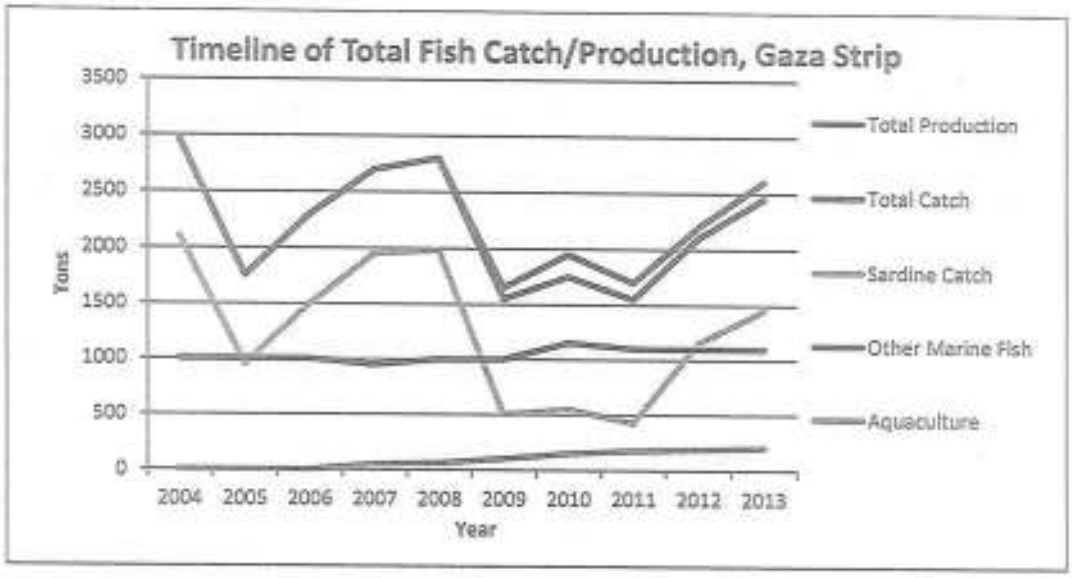
Yearly catch is currently approximately 2,700 tons although high variation per year is frequent due to the recent fluctuating off-shore access restrictions. Up to 4,500 households depend on this sector directly; this includes approx. 3,500 fishermen and approx. 1,000 people working in other professions related to the fisheries sector (mechanics, electricians, fishing gear traders, boat builders, as well those involved in trading, retail marketing and distribution of fresh fish). According to the Palestinian Authority's Directorate of Fisheries, there are 3 097 officially registered fishers in the Gaza Strip who are reliant on the fisheries sector for their livelihoods.

Access Restrictions along the Gazan Shoreline

One of the main limiting factors to this subsector is the current access restrictions to materials and fishing zones. Below is a brief timeline chronicling the fluctuating off-shore restrictions and corresponding political events:

- In accordance with the Oslo Agreements in 1993 and 1995, the 'designated fishing zone', which originally stretched from Port Said, Egypt to Israel (several hundreds of kilometers), was restricted to 20 nautical miles west of the shoreline.
- In May 2005, the fishing area was reduced by Israeli Authorities to 6 nautical miles from the shoreline.
- Directly after the 2008-09 Gaza conflict, the fishing zone was reduced even further to 3 nautical miles by Israeli Authorities.
- In January, 2010: Egyptian authorities permitted Palestinian fishermen access to Egyptian waters south of Rafah in order to alleviate the pressure resulting from the reduction of the fishing area of the Gaza Strip.
- Following the ceasefire of the November 2012 conflict, the restricted fishing area returned back to 6 nautical miles west of the shoreline.
- In 2013: Egyptian forces closed the Egyptian marine border to Palestinian fishermen (initially opened in January 2010).
- 2014: During the escalation of the conflict in 2014, the naval bombardment prevented fishermen's access to the sea. Moreover, Israel enforced an entire ban on access to the ocean during large periods of the 51 day conflict. The 6 nautical mile restriction was restored following the cessation of hostilities.
- April 3rd, 2016: Israeli authorities increased the fishing restriction to 9 nautical miles for a specific section of the Gazan shoreline (from Wadi Gaza to the Rafah boarder with Egypt). Restrictions on materials entering Gaza to maintain boats have also been eased.

Fishing in Gaza is a seasonal activity centered mainly in spring and autumn corresponding to the bi-annual sardine seasons; these seasons last for 2-3 months in spring and autumn. In March/April a migration of large groups of devil rays occurs along the Gazan coastline, making these months a highly active period for fishermen. During seasons when fishing is not profitable, or when weather conditions are not favorable, fishermen preform several on-shore activities such as: repairing boats, fishing nets, maintaining lights etc. The Diagram below illustrates the importance of sardine fishing in Gaza as it has consistently accounted for over 50% of annual catch except during the period when access restrictions were limited to 3 nautical miles (2009-2012).



Before the imposed restrictions of up to 6 nautical miles (pre-2005), sardine catch amounted to approx. 2 500 metric tonnes during peak years, while the sardine catch at the end of 2011 (3 nautical mile restrictions) amounted to just 350 metric tonnes (14 percent) in comparison. An extension of the current fishing limit to 12 NM (and to 20 NM according to the Gaza-Jericho agreement) would allow fishermen to exploit high value bottom fish leading to higher incomes and an increase in fish catch by an estimated 65 percent thus restoring legitimate livelihood opportunities to over 3 000 Gazan families. Moreover, ongoing restricted limits to zones along the relatively shallow coastline will lead to overfishing of resources further endangering the sustainability of fishing livelihoods in Gaza.

Sea fishing accounts for the vast majority of domestic fish supply in the coastal territory (95%- sea catch, 5% aquaculture) yet given the current and fluctuating access restrictions to the sea imposed by Egypt and Israel, this livelihood is increasingly unreliable. The diagram below highlights the major production and consumption trends in Gaza over the past 15 years along with the imposed restrictions at various stages alone the timeline. The key messages extrapolated from this diagram are as follows:

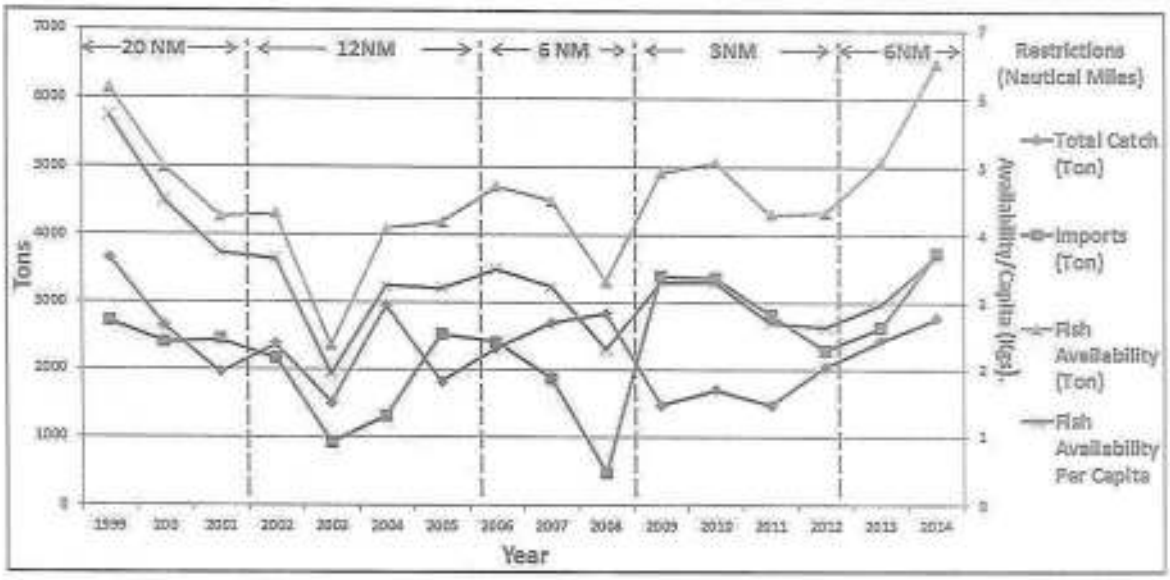
i) Highly vulnerable, impoverished sub sector with major production restrictions (i.e. limited access to sea)

ii) Current catch methods are endangering future stocks: over-fishing due to small mesh nets within restricted fishing zones

iii) Fish consumption is low (3.5Kg/Per); there is potential to expand by a factor of 4 when comparing nearby countries, leading to increased nutritional value of diets

iv) As consumption grows faster than production, imports increase to 15 year high

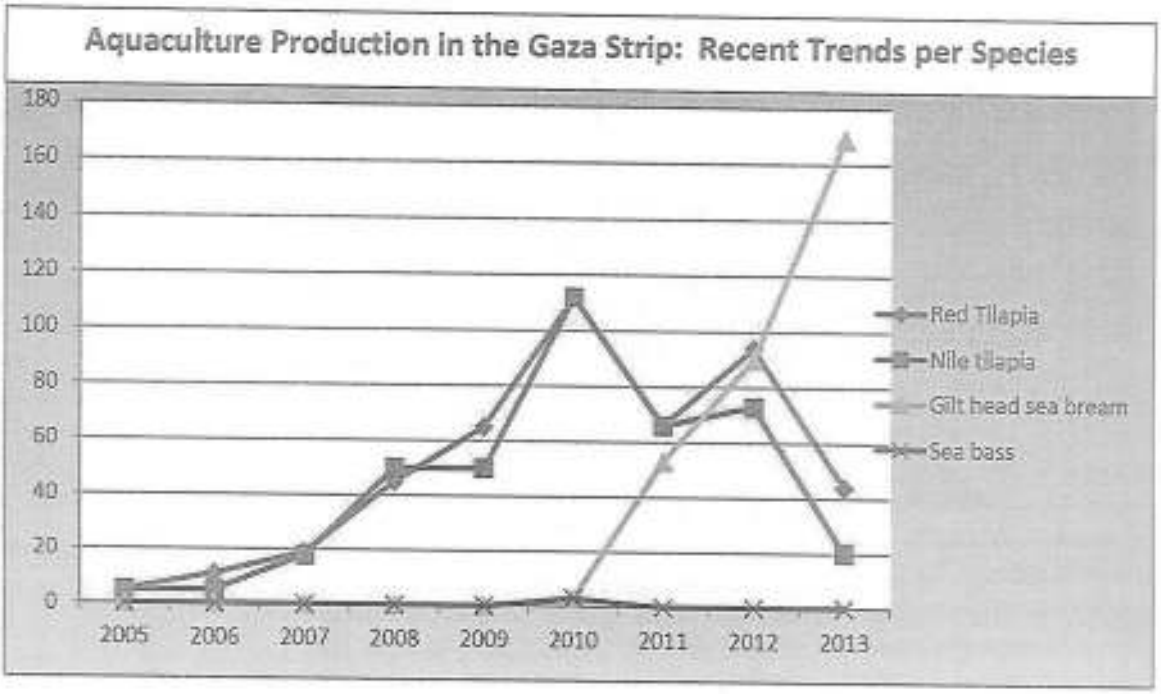
The Fisheries Sector in Gaza: Production and Consumption Trends over the last 15 years



Fishermen also face large risks with regards to often violent interactions with Israeli Naval Forces along the Gazan coastline, particularly when in close proximity to either the Israeli coastline to the east or the restricted fishing limit. This issue was most challenging during the 3 nautical mile restriction period (2009-2012). Between January and June, 2012, more than 64 shooting incidents by Israeli Navy at fishing boats were recorded by the Protection Cluster members of the Humanitarian Country Team. During these events, fishermen faced shootings and detentions meaning they were at risk of losing their fishing gear and boats essential to their livelihoods as they can be confiscated by Israeli authorities. As such, fishers in the Gaza Strip take a substantial risk whenever they enter the sea to perform their livelihood activities.

The Aquaculture Sector

In contrast to the fisheries sector, aquaculture in the Gaza Strip is now emerging as a viable subsector and sustainable source of fish. As given in the ILO Fisheries and Aquaculture Value Chain Report (2015), the aquaculture sector in Gaza is characterized by initial sector growth with tilapia production supported primarily by public sector and the international donor community (1994/2010). Following on from this, an intensive private-sector led expansion of sea bream production has emerged (since the 2010). The diagram below illustrates these trends in aquaculture production in Gaza since its inception. As of 2015, virtually all aquaculture production is Gilthead seabream.



Aquaculture in Gaza began in 2005 at a small-scale level with the introduction of tilapia production under the umbrella and support of the Palestinian Authority. Over the next 5 years, aquaculture production rose by 11 fold from 10 ton in 2005 to 115 ton in 2009. Freshwater tilapia (*O. niloticus* and *Oreochromis sp.*) represented 100% of aquaculture production up until 2009. In 2010 other marine aquaculture species, namely European seabass (*Dicentrarchus labrax*) and Gilthead seabream (*Sparus aurata)* were introduced. Given the higher local demand for marine fish species, and comparatively higher local price than tilapia, seabream has quickly and entirely replaced tilapia production.

As of 2016, there are 3 intensive fish farms producing sea bream established along the shoreline of Gaza, two close to Gaza City and the third based in Khan Yunis. All production facilities are established using greenhouse structures. The grow-out tanks are circular in shape and made from plastic-lined metal frames. The diameter of the tanks ranges between 8-15 m; the depth ranges between 1.2-1.5 m; and the water holding capacity ranges between 100-170 m3. They source water from saline groundwater using tube-wells and discharge the water from the farm back into the open sea with minimal treatment. The production capacity is approximately 25-30 kg of fish/m^3.

Key production inputs such as fish feed and seed material (fry) are currently being imported from Israel. Current demand for fry is approx. 1.8-2 million per year. Due to the tunnel closures to Egypt in 2013, Gaza is now dependent on Israel alone for marine fingerlings, fish feed, equipment and construction materials. These input costs are 20-100% more expensive compared with neighbouring countries due to the extra import duty and transport costs for Gaza which in turn significantly increases production costs. Apart from actual input costs, transportation of seed material from Israel is high risk as mortality rates are high due to lengthy delivery procedures. For these reasons, one of the intensive farms is currently piloting fry production on a small scale basis to reduce the costs and mortality rates via imports (more details to follow).

All 3 farms are managed by competent businessmen using relatively sophisticated materials with good productivity yet constrained by affordable access to key inputs. All production facilities currently produce gilthead seabream with a total production quantity of approximately 340 tonnes per year (2016). All three producers have vertically integrated their enterprises by establishing on-farm restaurants allowing them to increase their margin on fish sold in the restaurants. The two major

producers (located in Khan Yunis and South Gaza City) are currently in the process of large-scale expansion, more than double their current capacities. If projections are met, by the end of 2017 the Khan Yunis farm will have increased from 200 to 500 tonnes/yr. while the South Gaza City farm will expand from 120 to 320 tonnes/yr. The total increase by the end of 2017 will be 500 tonnes/yr. thus increasing total production capacity to 840 tonnes. According to both business owners, this increased capacity will be close to total local demand at their current cost and sale prices.

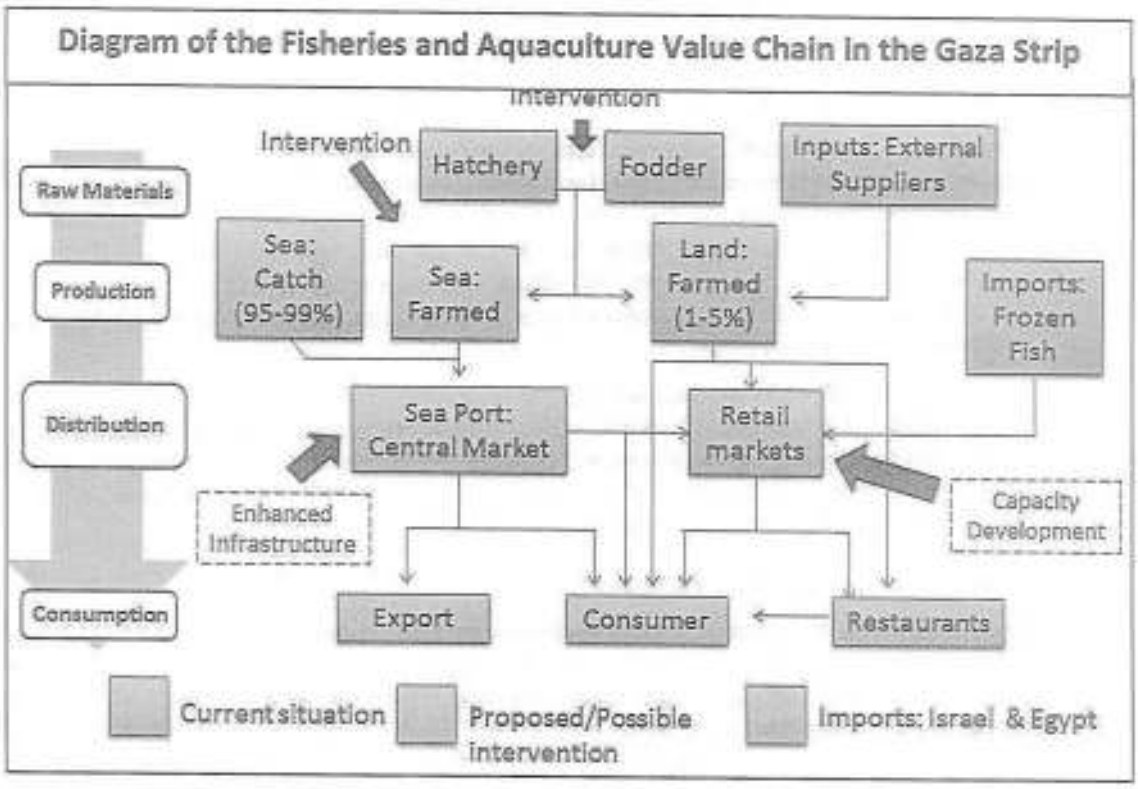
The third producer is much smaller in term of production capacity (20 tonnes per year) but he is focusing on producing seed material (fry) for the local supply chain. With financial support from USAID, he has recently established the first gilthead seabream hatchery in the Gaza Strip with a current production capacity of approx. 1 million fry. Still in the developmental phase, he has successfully produced his first batch of fingerlings with industry average mortality rates. In 2016 he sold he first batch of fry (approx. 50,000) to one of the larger fish producers at approximately 1.1 NIS/fry, close to 1 NIS cheaper than import prices.

Following the ceasefire of the latest war in Gaza (July-Aug, 2014), significant developments have also taken place regarding export restrictions and for the first time since the end of 2006, 600kgs of fish was exported to the West Bank. Moreover, between 10th November and 25th February 2014 up to 4 tonnes of fresh fish was exported. This change in policy potentially opens up new markets for fish producers in Gaza allowing for sustainable expansion of local production.

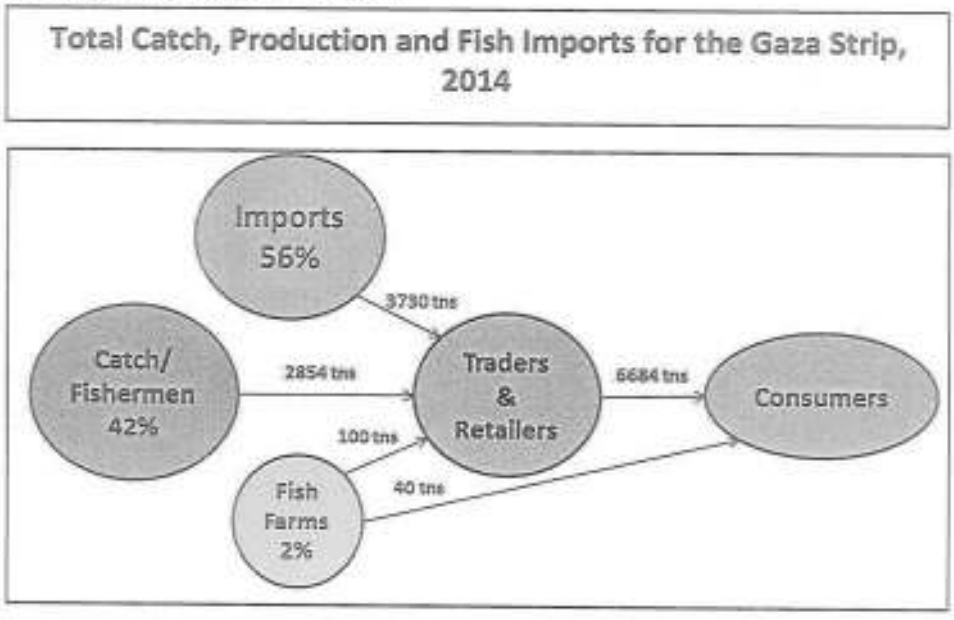
The Fisheries and Aquaculture Value Chain

Fish consumption in the Gaza Strip is low (3.3kg/person/year) compared with the World consumption average of 15.5kg per person per year (excluding China). For Mediterranean countries only, the average is 16.85; when taking the average for the 5 neighboring Mediterranean countries of 16.36Kgs per year (Egypt, Israel, Lebanon, Syria and Cyprus), Gaza's consumption is still 4-5 times smaller. Moreover, although there was significant population increase in the Gaza Strip, fish consumption was almost stable from 1998 to 2009 and it stood at 4,925 ton during 2009 with an annual per capita consumption of 3.3 kg. As given by the MoA in Ramallah, fish consumption in the West Bank is also similar to the Gaza strip (about 5000 ton). Therefore the current total consumption of fish in WBGS is approximately 10,000 ton.

The flow chart diagram below explains the current organization of the fisheries and aquaculture value chain in the Gaza Strip:



The second diagram (next page) takes total production and fish import figures for 2014 and provides an explanation of the breakdown per sector:



As highlighted in the diagram above, local production from marine fisheries and on-shore aquaculture is not enough for the consumption needs in the Gaza Strip. As such, imported frozen products play a key role in filling the gap between local production and demand. Several Palestinian companies import frozen food including meat, fish, chicken, vegetables, processed meat products, etc.

In Gaza, there are three companies which import Israeli fresh fish from Israel and display it at auctions. The imported fish include:

- Marine fish: Rays, Shrimp scad, Chub mackerel, Sardine species, Common Pandora, boops boops, Sharks, Guitar.
- Fresh water fish: salogairderi, Black tilapia, Red tilapia, Thin lip gray mullet, molitrix.
- Mariculture fish: Sea bream.

Imported Fish are checked at Kerem Shalom crossing point by technicians from the Ministry of Agriculture. According to Palestinian traders, the Israeli traders often sell low quality fish to the Gaza Strip from aquaculture or from Lake Tiberias, which negatively affect the perception of fresh water of Gazan customers. Palestinian companies also import frozen fish from Southern American countries such as Argentina and Uruguay due to agreements between these countries and Israel to exempt the imported fish from the customs, which leads to a reduced prices. The imported frozen fish are: Cat fish fillets (Pangasius *Hypothalmus*), Hake (*Merluccius Habbsi*), Castaneta (*Nemadactylus bergi*) and Croaker (*Microponias furneiri*). *Castaneta* sp. is sold in Gaza under the name of gilthead seabream as it is similar in appearance and texture. Egyptian fish also enters Gaza through tunnels although to lesser extent after 2013 due to wide scale tunnel closures by the Egyptian authorities. Fish are displayed at auction sites or directly in public markets.

According to ILO's Report on Gaza's fisheries and aquaculture value chain, the post–harvest activities of marketing and distribution of fish are traditional and outdated. Fish is unloaded from boats onto wooden and/or plastic boxes and then loaded on carts pulled by mules or cars and brought to central auctions/markets. The auction sites are open plan along the wharfs thus subject to pollution and adverse environmental conditions which affect fish quality. As such, there is substantial exposure to hazards for consumer health as the fish are often in the sun for lengthy periods of time and may come in contact with bacteria and pollutants from animals or the local environment.

Each morning, retailers participate in auctions/markets at the 5 central markets which include: Gaza Market; Deir al-Balah market; Khan Younis market and the Rafah Market. Newly bought fish is then transported to retail markets by cars, non-motorized vehicles or carts; some of product is also sold using small carts pulled through streets of crowded neighborhoods. Fish retailers are found in public markets which include fruits, meat, vegetables, etc. Fish in these markets are displayed without proper attention to hygiene which creates further hazards to consumer health.

Finally, there are no fish canning factories in Gaza strip. As such, all canned fish in Gaza is imported either for trading and/or as a staple component of the food packages distributed by emergency agencies like UNRWA for poor families. The amount of imported canned fish in 2013 was 191 tons. There are three traders who import the canned fish directly from Thailand, Vietnam, Portugal and China, and around 20 traders who import it from Israel.

ANNEX 6: Analysis of Cage Farming Development in the Gaza Strip

The following analysis for cage farming in the Gaza Strip is a summary of the outputs from a FAO technical mission by two aquaculture consultants to the Gaza Strip conducted in October 2015. A brief summary of their ToRs and outputs is as follows:

- Desk review of all documents and materials on fisheries and aquaculture in the Gaza Strip;
- Field mission to the Gaza Strip and Jerusalem to meet with various Fisheries and Aquaculture stakeholders;
- Support to the elaboration of a Project Document on the development of Marine Aquaculture in the Gaza Strip and supporting technical reports.

The outputs are as follows:

- ***Technical report:*** Economic and technical considerations for the establishment of cage farming and a marine hatchery;
- ***Socio economic Impact assessment:*** Socio-economic impact assessment on the development of Marine Aquaculture and most ideal strategy for the development of the sector in the Gaza Strip.
- ***Project Document:*** A draft FAO Project Document and corresponding budget on the Development of Marine Aquaculture in Gaza Strip.

1) Technical feasibility: Preliminary findings

To evaluate the conditions for establishing a cage fish farm and propose a suitable technical design and operational set-up, the following principal factors were considered by the experts:

a) Environmental & Hydro graphic conditions
b) Candidate fish species
c) Socio-economic aspects (infrastructure, technical expertise, institutional backing).

Of particular importance for cage unit installation evaluation is reliable hydrographic data on the extreme current and wave conditions along the Gaza coastline, including the frequency and duration of major storms. The most important information and data for determining the feasibility of open-sea cage culture development in Gaza are:

1. Nautical Chart, preferably in scale of 1: 30.000 or better, covering the whole area, with precise bathymetry info.
2. Extreme wave data,
3. Storm occurrence frequency and severity.
4. Extreme currents, in surface and at depth, particularly during storm events
5. Prevailing and extreme wind velocities and directions, in wind rose velocity-frequency format.
6. Sea water temperature data with mean monthly values,3.2.2 Activities in Gaza

Below is a summary of the key comments, views and options from stakeholder meetings in Gaza and Jerusalem during the technical mission:

- Severe winter storms can last 3 - 5 days, with typically 2 – 4 storms /yr., in the period from end November until February. Exceptionally, every 5yrs, it is no possible to go out to sea for up to 10 days

- Seafloor is predominantly sand up to 25 m depth, after which changes to clay
- Cage farming can pollute waters. An environmental impact study needs to be performed ahead of any activity; An exceptional storm occurred in January 2013, with damages even inside Gaza Port
- Off-shore storm conditions are similar in North and in South of Gaza Strip
- Boats longer than 8 m are anchored permanently at sea in front of the wharfs, but need to be sheltered in Gaza port ahead of storms even in summer, some 7 – 9 times each year
- Cage aquaculture facilities will remove the already minimal fishing grounds which we are allowed to exploit today
- Cages must be located in the Fishing Zone border area between Gaza and Israel, or beyond the 6-mile limit
- Small boats (hasaka) can be deployed from beach wharfs, with up to 500 kg load on-board;
- A new law for the sea will be passed and formally approved next month(DEC, 2015), which also regulates fish farming activities
- Local actors/stakeholders prefer training in countries such as Italy, Turkey, rather than in Israel
- Aquaculture farmers remarked the importance to have a marine hatchery in Gaza because the import of fingerlings from Israel is not sustainable anymore; price, transport stress/disease are key problems
- Local institutions agree on the importance of marine hatchery for sector consolidation in Gaza.
- The Fishermen's Union delegates and The Al Twfeek Cooperative Society for fishermen agreed on the proposal to implement the cage farm project in Gaza.
- The marine aquaculture farmers agreed on the proposed approach of "social business", Farmers Association and Public/Private joint venture for hatchery management.

During the meetings, FAO experts provided counter-arguments to some of the negative views, and the cage culture expert presented a customised power-point technical document on "offshore cage technologies" to better illustrate the project design.

2) Problems and issues to be addressed

It is evident that there are severe bottlenecks impeding further expansion of marine aquaculture in Gaza. A comprehensive strategy is required to adequately address key issues which are as follows:

- Private sector:
  - i) High cost of imported inputs
  - ii) Risks for fingerlings transport and disease;
  - iii) Scarce land availability in Gaza;
  - iv) Minimal level of technical experience
  - v) Limited know-how and business managerial competence
  - vi) Low level of public infrastructure.

- Institutional issues
  - vii) Low level of institutional capacity building for sector supporting and social resource mobilization;
  - viii) No clear legal background and regulation for marine aquaculture.

3) Fish Species selection

The European sea bream, *Sparus auratus*, is a species already cultured on land in Gaza. It has good market acceptance and market price. Fry can be purchased from neighbouring countries, and there is the possibility of obtaining pre-grown juveniles from land-based farms in Gaza. It grows well in the

prevailing sea water temperatures, and is relatively robust to handling (and mishandling) in the cages. As such it represents the optimal species of choice for the Pilot project. Should market dynamics require other locally marketable species, an alternative species is European sea bass, *Dicentrarchus labrax*, which is similar in size and texture with a slightly longer grow-out period of 12-13 months.

4) Cage Culture Farm : Technical Design and economic analysis

4.1 Main field mission findings

During a boat trip/technical survey of the Gazan shoreline (Nov. 2015), depth soundings were executed and sediment samples were collected with a rudimentary, locally built cylindrical bucket sampler. The depth measurements confirmed very good correspondence with the Navionics on-line nautical map. This confirms also the gradually decreasing seafloor slope between the North and South borders of the Gaza Strip Coastline: in proximity of Gaza port we reach 30 m depth at 2 nautical miles from the coast, while at Rafah, at 30m depth is almost at 5 miles.

- Collected sediment samples indicate a mix of mud and clay at seafloor surface on all stations at depth range 29 – 36 meters, well-aerated. At one station point, 28m depth, coarse sand was found.
- A wide belt (approx. 1 mile) with very flat seafloor, 30 – 31m deep was found 2.5 – 3 nautical miles NW of Gaza Port. This represents a favourable location for siting the pilot cage facility. No indicators of sewage pollution were seen. The transparency of the sea was higher in the South than in the North.

4.2 Technical design considerations

Excerpts on wave height predictions were received after the FAO technical field mission (Nov. 2015) indicating significant wave heights may range from 6 to 10 meter. Lacking relevant official data, we have relied on data from a cage farm facility sited 55 nautical miles North of Gaza, near Hadera, Israel, to categorize the prevailing hydro graphic conditions we can expect offshore the Gaza Strip. In January 2013, the wave buoy at Hadera recorded maximum wave height of 13 m, during a storm lasting 8-9 days. The marine currents, especially when of long duration, can be even more deleterious than the waves. Currents of 1.5 – 2.2 knots were recorded during storms in Hadera.

Assuming similar conditions as in Hadera, the marine/weather condition that can occur in the Gaza Strip off shore coastline are amongst the most severe in which cage farming of warm-water fish is practiced. Thus, this requires the application of cage technologies suitable for the open-sea. Amongst the few designs that have proven themselves in extreme sea conditions, the Refa Tension Leg Cage (TLC) is selected on basis of sea-worthiness, ease of installation and use, plus competitive cost. This cage technology is used in the farm near Hadera.

Other applicable technologies are the Aquapod and Sea Station cages. They are not here considered further for this project on account of high investment costs (about 3 x higher compared to TLC). Similarly, The Subflex cage system, used near Ashdod, has not been considered due to large unit size, high investment (> 2 million S$) and operational complexity (difficult to adapt to a Pilot facility).

Alternative farm configurations have been examined analysing them from the viewpoint of important factors such as:

a) Suitability for the selected marine sites and for the candidate fish species (initially sea bream) to be cultured,
b) Ease and effectiveness of operation in the prevailing environmental, logistical, and socio-economic realities in the region of Gaza,

c) Ruggedness in exploitation, simple to operate, and low-maintenance requirement,

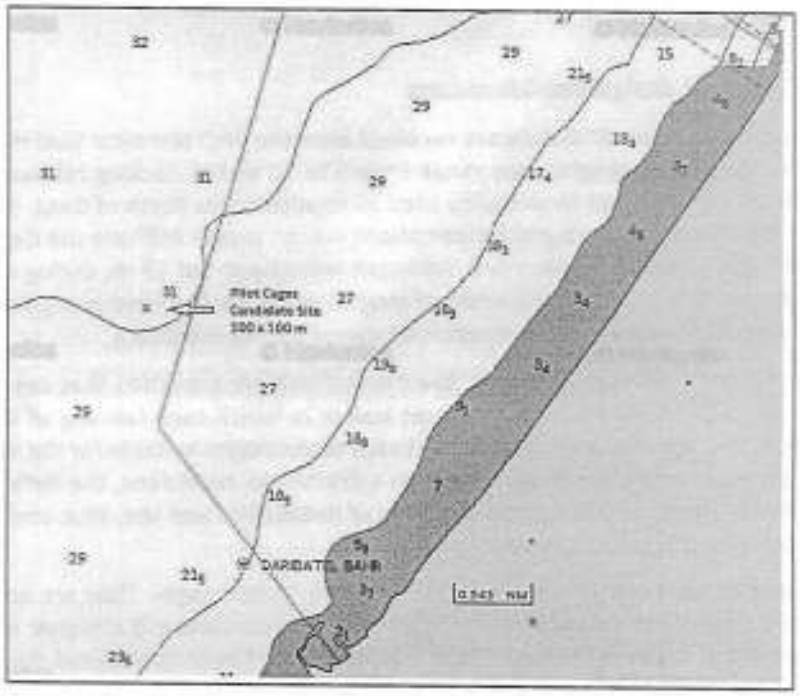
d) Cost effectiveness: combining an acceptable investment cost /unit fish production output with adequate supporting boats and equipment necessary for everyday fish farm husbandry, plus regular fingerling stocking and fish harvest activity.

e) Ensuring adequate reserve to cover unforeseen equipment malfunction, breakdowns, service and overhaul periods.

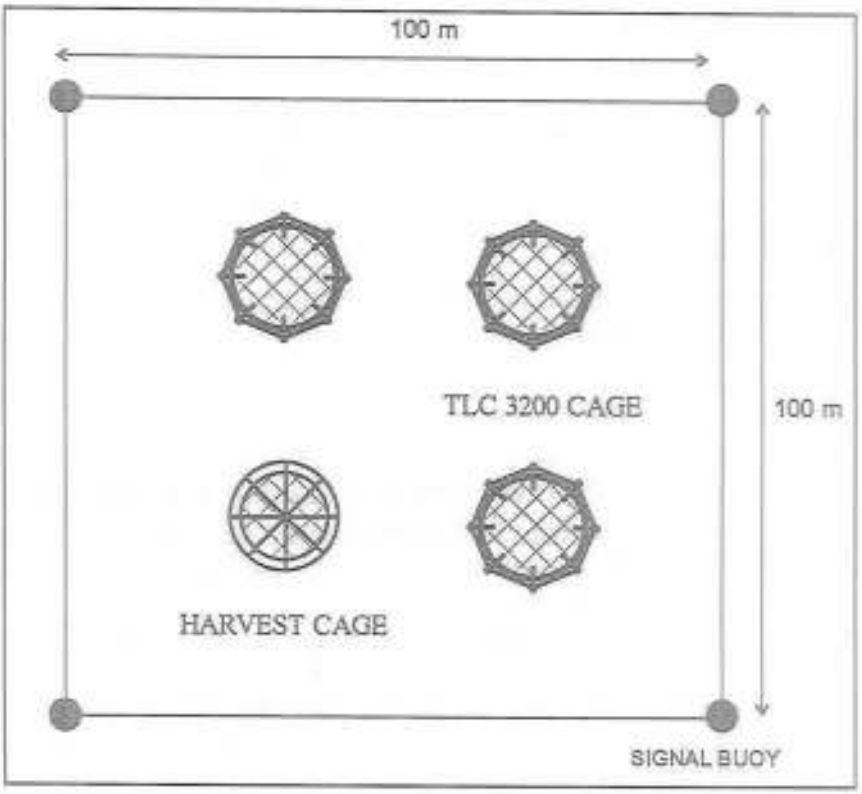
f) Securing adequate quantities of cage nets for nursery fish rearing stages, plus cages dedicated to conditioning fish for harvest, to provide for fish well-fare, growth performance and ensures the attainment of projected fish production volumes.

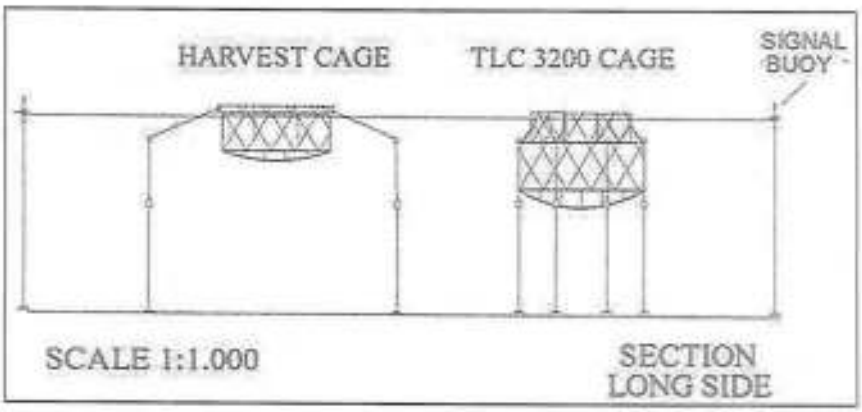
Conclusions and recommendations:

The cages unit must be ideally located at depth of 30 – 40m; at lower depths there is significant interaction between wave motion and seafloor; at higher depth the installation and servicing becomes more difficult. Proximity to port is an important issue as it dictates the following concerns: time requirement to reach the cages; ability to sail out from the shore during storms (not possible from wharfs); serviceability with large vessels. Based on all of the above, a site near Gaza port using TLC cage design has been selected (see map below, orange dot with arrow). A technical drawing of the 150 tonne capacity TLC cage farm for Gaza is given in the follow page.



A map of North Gaza Shoreline indicating optimal farm location





Technical design drawing for a pilot cage facility in the Gaza Strip

An alternative location could be some 5 miles offshore from Khan Yunis Wharf. This location has 2 advantages:

a) the waters are more transparent;

b) the fishermen there may be more collaborative and may be less risk of robberies.

The disadvantages are:

a) if service boats are launched from the Gaza port, the distance is 6 times longer than the location given in the north; given the economic parameter for fuel in the tables below, this increase in fuel consumption would increase the production cost per kilo for this location by approximately US$1.

b) Difficulty to access from shore in periods of moderate storms;

c) Difficult logistics for transferring of feed and materials from warehouse to cages.

4.3 Economic analysis

This paragraph provides clarifications for the financial/economic data given in the tables below for the proposed cage unit in the Gaza Strip. The main issues to be considered are the following:

- Both management and productive targets are related to the commercial phase of the cage unit, after the 'start-up' phase.
- The 'start-up' phase will ensure optimised technical and financial components of the cage farm facility requiring the first 1 year of the project timeline (FAO TA/Project);
- The proposed scenario detailed in the tables below is profitable. Production level/volume and the product price can be determined to know the target to cover all the production costs. After this point the farm starts to make profit.
- The breakeven point considers the unit contribution margin (unit selling price less the variable cost unit). This remaining data represents the available amount of money for the business, after the variable cost (row materials, labour cost, etc); to cover the production fixed costs.
- The breakeven economic analysis is limited as it does not take into account the price variation during the same year or local taxes.
- The main cage farm economic parameters are as follows:

CAGE UNIT MAIN PARAMETERS

Production target unit KG	150 000
Income $	1 320 000
Construction cost $	550 000
Vehicle $	36 000
Maintenance $	6 600
Fingerlings n	560 224
Fingerlings cost $	308 123
Feeding kg	258 559
Feeding cost $	466 289
Technical staff $	69 300
Depreciation/fixed cost	117 200
Variable costs	915 312
EBITDA (Earnings before Interest, Taxes and Depreciation)	404 688
Total cost of production	*1 032 512*
Breakeven/kg	43 407
Breakeven/$	381 981

ECONOMIC DATA –CAGE REARING UNIT (US$)

Estimated break even analysis Gaza Marine Cage Unit			
Descriptions	*Table size production*		
Year	1	2	3
Production kg	150 000	150 000	150 000
a) Income (8.8$/kg)	1 320 000	1 320 000	1 320 000
FIXED/INVESTMENT COSTS	**US$**		
Cage unit installation investment cost	550 000	0	0
Depreciation construction 5 years	*110 000*	*110 000*	*110 000*
Vehicles investment costs	36.000	0	0
Depreciation vehicles /5 years	*7 200*	*7200*	*7 200*
b) Total depreciation	**117 200**	**117 200**	**117 200**
VARIABLE COSTS			
c) Raw material costs			
Fingerlings (n. 560 224)	308 123	308 123	308 123
Feeding (kg 258 259)	466 289	466 289	466 289
c) Total raw materials	*774 412*	*774 412*	*774 412*
d) Operative costs			
Energy /fuel	28 000	28 000	28 000
Maintenance	6 600	6 000	6 000
Other	25 000	25 000	25 000
Labour cost	69 300	69 300	69 300
Administration miscellanea	12 000	12 000	12 000
d) Total operative costs	*140 900*	*140 900*	*140 900*
e) Total variable costs (d+c)	**915 312**	**915 312**	**915 312**
Unit variable cost kg (total 150 000 kg)	6.10	6.10	6.10
EBITDA (Earnings Before Interest, Taxes, Depreciation/Amortization	**404 688**	**404 688**	**404 688**
h) Total cost (e+b)	*1 032 512*	*1 032 512*	*1 032 512*
f) Taxes (according to Gaza Law)	0	0	0
g) Interest (private sector financial resources)	0	0	0
Profit (a-h)	*287 488*	*287 488*	*287 488*
% margin profit/income	21.78%	21.78	21.78
Total cost	1 032 512	1 032 512	1 032 512
Unit total cost	6,88	6,88	6,88
% variable cost	88.35%	88.35%	88.35%
u) Unit contribution margin Unit value (a-e) $ (8.8-6.10)	2.7	2.7	2.7
Breakeven point (Kg) 117 200/2.7 b/u	43 407	43 407	43 407
BEP Breakeven point (income) Kg x8.8	381 981	381 981	381 981